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instruments the error introduced by a pressure difference is in the opposite direction so that the two errors compensate at some point on the scale and by adjustment of the zero point the instrument may be made to read correctly at any desired part of the scale.

There is 1 figure.

ASSOCIATION: VNIIM

SUBMITTED: July 13, 1961.

Card 2/2

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KREMLEVSKIY, P.P.; GONEK, N.F.; PEDAN, M.S.

Automatic continuous performance of two bell-type measuring tanks.
Izm.tekh. no.3:50-53 Mr '62. (MIRA 15:2)
(Flowmeters)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

L 10723-63 BDS

ACCESSION NR: AT3002049 S/2589/62/000/066/0005/0013

AUTHOR: Gonek, N. F.; Kremlevskiy, P. P.; Pedan, M. S. 50

TITLE: Automatic calibrating gas-measuring devices 10

SOURCE: USSR. Komitet standartov, mer, i izmeritel'nykh priborov. Trudy* institutov Komiteta, no. 66 (126), 1962. Issledovaniya v oblasti izmereniy davleniya, raskhoda i vakuuma, 5-13

TOPIC TAGS: calibrating gas-measuring devices, continuous flow of gas

ABSTRACT: An experimental automatic calibrating gas-measuring device with 2 continuously operating measuring tanks was found to substantially increase the threshold value of "checking" consumption. It is a particularly valuable device when used for certain types of research in that a continuous flow of gas is involved. Further work is suggested in the study of the metrological characteristics of these devices in order to determine threshold input values for given measuring tank capacities and with regard to a choice of the most efficient types of automatic equipment. Orig. art. has: 8 figures.

ASSOCIATION: VNIIM

SUBMITTED: 11Dec61 DATE ACQ: 20Apr63 ENCL: 00

SUB CODE: 00 NO REF SOV: 000 OTHER: 000

Card 1/1

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

BOGUSLAVSKIY, Moisey Grigor'yevich, kand. tekhn.nauk; KREMLEVSKIY, Panteleymon Petrovich, kand. tekhn. nauk; OLEYNIK, Boris Nikolayevich, kand. tekhn. nauk; CHECHURINA, Yekatirina Nikolayevna, kand. tekhn. nauk; SHIROKOV, Konstantin Pavlovich, kand. tekhn. nauk; BURDUN, G.D., prof., doktor tekhn. nauk, retsenzent; RYSKO, S.Ya., red.izd-va; MEDVEDEV, L.Ya., tekhn. red.

[Tables for the conversion of measurement units] Tablitsy perevoda edinits izmerenii. [By] M.G.Boguslavskii i dr. Moskva, Standartgiz, 1963. 116 p. (MIRA 16:12)
(Weights and measures--Tables, etc.)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

BOGUSLAVSKIY, Moisey Grigor'yevich, kand. tekhn.nauk; KREMLEVSKIY, Panteleymon Petrovich, kand. tekhn. nauk; OLEYNIK, Boris Nikolayevich, kand. tekhn. nauk; CHECHURINA, Yekaterina Nikolayevna, kand. tekhn.nauk; SHIROKOV, Konstantin Pavlovich, kand. tekhn.nauk; BURDUN, G.D., doktor tekhn. nauk, retsenzent; RYSKO, S.Ya., red.izd-va; MEDVEDEV, L.Ya., tekhn. red.

[Tables for the conversion of measurement units] Tablitsy perevoda edinits izmerenii. [By] M.G.Boguslavskii i dr. Moskva, Standartgiz, 1963. 116 p. (MIRA 17:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii im. D.I.Mendeleyeva (for Boguslavskiy, Kremlevskiy, Oleynik, Chechurina, Shirokov).

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

AM4016107 BOOK EXPLOITATION S/

Kremlevskiy, P. P.

Flowmeters (Raskhodomery*), 2d ed., rev. and enl., Moscow, Mashgiz, 1963, 655 p., illus., biblio., Errata slip inserted. 8,000 copies printed.

TOPIC TAGS: flowmeter, tachometric flowmeter, electromagnetic flowmeter, ultrasonic flowmeter, calorimetric flowmeter, thermoanemometric flowmeter, ionization flowmeter, nuclear magnetic resonance flowmeter, partial flowmeter, spring differential manometer, compensation differential manometer, liquid differential manometer, floating differential manometer, bell differential manometer

PURPOSE AND COVERAGE:The book gives the theoretical bases and a critical analysis of the operation of industrial devices for measuring the consumption of a liquid, gas, or vapor. Meters of a variable drop in pressure, a variable level, flow (constant drop in pressure, floating, spring, vane), activated flow, tachometric, electromagnetic, ultrasonic, calorimetric, thermoanemometric, ionization, nuclear magnetic resonance, partial, and others are considered. The book is intended for engineers and technicians who design and use flowmeters.

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KRYMLEVSKIY, V.P.

Scientific technical conference "Methods and instruments for measuring the consumption and quantities of fluid, gas and steam." Izm. tekh. no.3:50-53 Mr '64 (MIRA 17:8)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KREMLEVSKIY, P.P.

Present status of the measurements of consumption and volumes of liquids, gas and steam. Izm. tekh. no.6:45-50 Je '64.

(MIRA 17:12)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KREMLEVSKIY, P.P.

Introduction of the International System of Units in the field of physical measurements. Izm. tekh. no.2:12-13 F '65.
(MIRA 18:6)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KREMLEVSKIY, P.P.; GONEK, N.F.; PEZAN, M.S.

Automatic continuous gas meter units for measuring gas flows up to 0,042 m^3/sec. and up to 0,42 m^3/sec. Izm. tekh. no.4: 36-39 Ap '65. (MIRA 18:7)

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KREMLEVSKIY, P.P.

Terminology for elements of complex measuring instruments.
Standartizatsiia 29 no.10:53-55 O '65.
(MIRA 18:12)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

L 31976-66 EWT(d)/EEC(k)-2/EWP(v)/T/EWP(k)/EWP(h)/EWP(1)
ACC NR: AP6010866 SOURCE CODE: UR/0115/66/000/002/0019/0022

AUTHOR: Kremlevskiy, P. P.; Gonek, N. F. 38 B

ORG: none

TITLE: Dynamic characteristics of measuring instruments 14

SOURCE: Izmeritel'naya tekhnika, no. 2, 1966, 19-22 10

TOPIC TAGS: measuring instrument, measurement, SCIENTIFIC STANDARD

ABSTRACT: There has been no uniformity in criteria and terms used in various Soviet Standards for describing dynamic characteristics of measuring instruments. These terms and their definitions used in various Standards are cited: "thermocouple inertness," "thermal inertia factor," "thermal inertia," "transient time," and "delay constant." Most Standards specify the "sluggishness time" as the only criterion for dynamic characteristics; this is acceptable if the transient 19

Card 1/2 UDC: 621.1/2.087.44

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

L 31976-66
ACC NR: AP6010866

process is describable by a first-order linear equation. Any, however complicated, measuring instrument can be approximately described by an n-order differential equation. Two quantities are recommended for evaluating the dynamic properties of an instrument: time constant T_1 and order of the equation n. The latter determines the initial, the most important, part of the transient response curve; the time constant characterizes the rest of the curve. It is theoretically proven that these two quantities adequately describe the dynamic properties of any aperiodic system, such as a thermoelectric pyrometer, thermometer, manometer, or impulse-tube differential manometer. Orig. art. has: 2 figures, 12 formulas, and 1 table.

SUB CODE: 13, 09 / SUBM DATE: none / ORIG REF: 002

Card 2/2

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

86140

9.2520 (1020, 1024, 1154)

S/112/59/000/012/086/097
A052/A001

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1959, No. 12, pp. 254-255, # 25698

AUTHORS: Kremlevskiy, V., Yue Chzhen'-u

TITLE: Transistorized Direct Current Amplifier

PERIODICAL: Sb. nauchno-issled. rabot stud. Elektromekhan. fak. Leningr. politekhn. in-t, 1958, No. 3, pp. 75-79

TEXT: A description and calculation of the circuit of a direct current transistorized amplifier, executed as an attachment to the МПО-2 (MPO-2) oscillograph or to a pointer-type instrument, are given. The amplifier is assembled on ПЛА (PLA) triodes for the signal amplification from thermocouple within the range of 0-8 millivolts. The drift of the amplifier is 5 millivolt/hour. The amplifier is supplied from the network of 127 volts, 50 cycles. It is proposed to connect, instead of the usual capacitor, in the filter parallel to the load a transistor through which the variable component of the rectified voltage is

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

86140

Transistorized Direct Current Amplifier

S/112/59/000/012/086/097
A052/A001

passed. An experimental check has shown that at a pulsation in the input of 10% the pulsation in the output is 0.05%, that is the smoothing factor is 200.

V.M.L.

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

24108
S/196/61/000/006/003/014
E073/E535

24.5600 (1482, 1537, 1137)

AUTHORS: Brodskiy, A.D., Kremlevskiy, V.P., Savateyev, A.V.

TITLE: New methods of realizing the thermodynamic scale in the range of low temperatures

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, 1961, No.6, pp.3-4, abstract 6G23. (Tr. in-tov Kom-ta standartov mer i izmerit. priborov pri Sov. Min. SSSR, 1960, Issue 49, (109), 24-29)

TEXT: The paper deals with work on realizing a thermodynamic scale at low temperatures by the method of an electroacoustic gas thermometer and the method of counting thermal noise voltage pulses. Realization of the thermodynamic temperature scale by means of the electroacoustic gas thermometer is based on the dependence of the temperature of the resonant frequency of the oscillations of the sound wave in an acoustic tubular resonator. The realization by means of a thermal noise thermometer is based on the temperature dependence of the number of noise voltage pulses, the amplitude of which exceeds a given discrimination threshold. In the applied methods, measurement of the temperature is realized by means of

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frequency measuring instruments, as a result of which a high sensitivity is achieved which increases with decreasing temperature. Basic circuits are given for both systems and also the results of measuring the boiling temperature of hydrogen and oxygen. It is pointed out that although the obtained results are in good agreement with the data of the international temperature scale, they are preliminary, since the influence of systematic errors on the measured results has not been adequately studied. Work is continuing on improving the accuracy of the thermodynamic temperature scale in the range 4-273°K by means of the electroacoustic gas thermometer and the thermal noise thermometer methods and work is also continuing on stabilizing the temperature field and excluding systematic errors. 3 references.
Abstracted by L. Boronina.

[Abstractor's Note: Complete translation.]

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

(5)

[illegible], A. D.; FRONLEVSKIY, V. P.; SAVATEYEV, A. V.

"Nouvelles methodes de realisation de l'echelle thermodynamique dans le domaine des basses temperatures."
Report presented at the 6th Session of the Advisory Committee on Thermometry to the International Committee on Weights and Measures, Sevres, France, 25-27 Sep 62

Institut de Metrologie D. I. Mendeléev (U. R. S. S.)

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

BRODSKIY, A.D.; KREMLEVSKIY, V.P.; SAVATEYEV, A.V.

New methods for establishing a thermodynamic low-temperature scale. Izm.tekh. no.9:35-36 S '62. (MIRA 15:11)
(Thermometry)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

BRODSKIY, A.D.; KREMLEVSKIY, V.P.; SAVATEYEV, A.V.

New methods for establishing a thermodynamic scale in the range of low temperatures. Trudy inst.KOM.Stand., mer i izm.prib. no.49:24-29 '60. (MIRA 15:12)
(Low temperature research)
(Thermometry)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KREMLICKA, Ludvik

Rapid cataract development in bilateral uveitis. J. Hyg. Epidem., Praha 3 no.2:219-222 1959

1. II. ocni klinika fakulty vseobecneho lekarstvi University Karlovy v Praze, prednosta akademik J. Kurz. Ocni oddeleni UDL na Bulovce, prednosta doc. dr. P.V. Michal.
(UVEITIS, compl)
(CATARACT, case reports)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KREMLICKA, Ludvik

Metastatic carcinoma of the iris. Cesk.ofth.17 no.2:141-147 Mr '61.

1. Ocni oddeleni nemocnice na Bulovce v Praze, Klinicka zakladna UDL, prednosta doc. MUDr. F.V. Michal.
(IRIS neopl)
(CARCINOMA case reports)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KREMLICKA, L.

Diagnostic difficulties in choroid angioma. Cesk. oftal. 18 no.6: 422-427 N '62.

1. Ocni oddeleni nemocnice na Bulovce, klinicka zakladna Ustavu pro doskolovani lekaru v Praze, prednosta doc. dr. F. Michal.
(CHOROID NEOPLASMS) (HEMANGIOMA)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

CEJKA, Milan; KREMLICKOVA, Jitka

Determining gasoline vapors in the air by indicator tubes.
Ropa a uhlie 6 no.11:345 N '64.

1. Benzina National Enterprise, Department of Lubrication and Fuel Technology, Prague.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KREMLYAKOVA, V.Ya.; KRUKOVSKIY, A.A.

New method for cutting shoe upper parts. Kozh.-obuv.prom. 5 no.10:35-36 O '63. (MIRA 17:4)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

RABINOVICH, Moisey Markovich; RUL'KOV, Dmitriy Ivanovich; KREMLYANSKIY, A.N., red.; VOLCHOK, K.M., tekhn. red.

[Principles of navigation at sea and on lakes] Osnovy morskogo i ozernogo sudovozhdeniia; sbornik zadach. Leningrad, Izd-vo "Rechnoi transport," 1962. 158 p. (MIRA 16:5)
(Navigation--Problems, exercises, etc.)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

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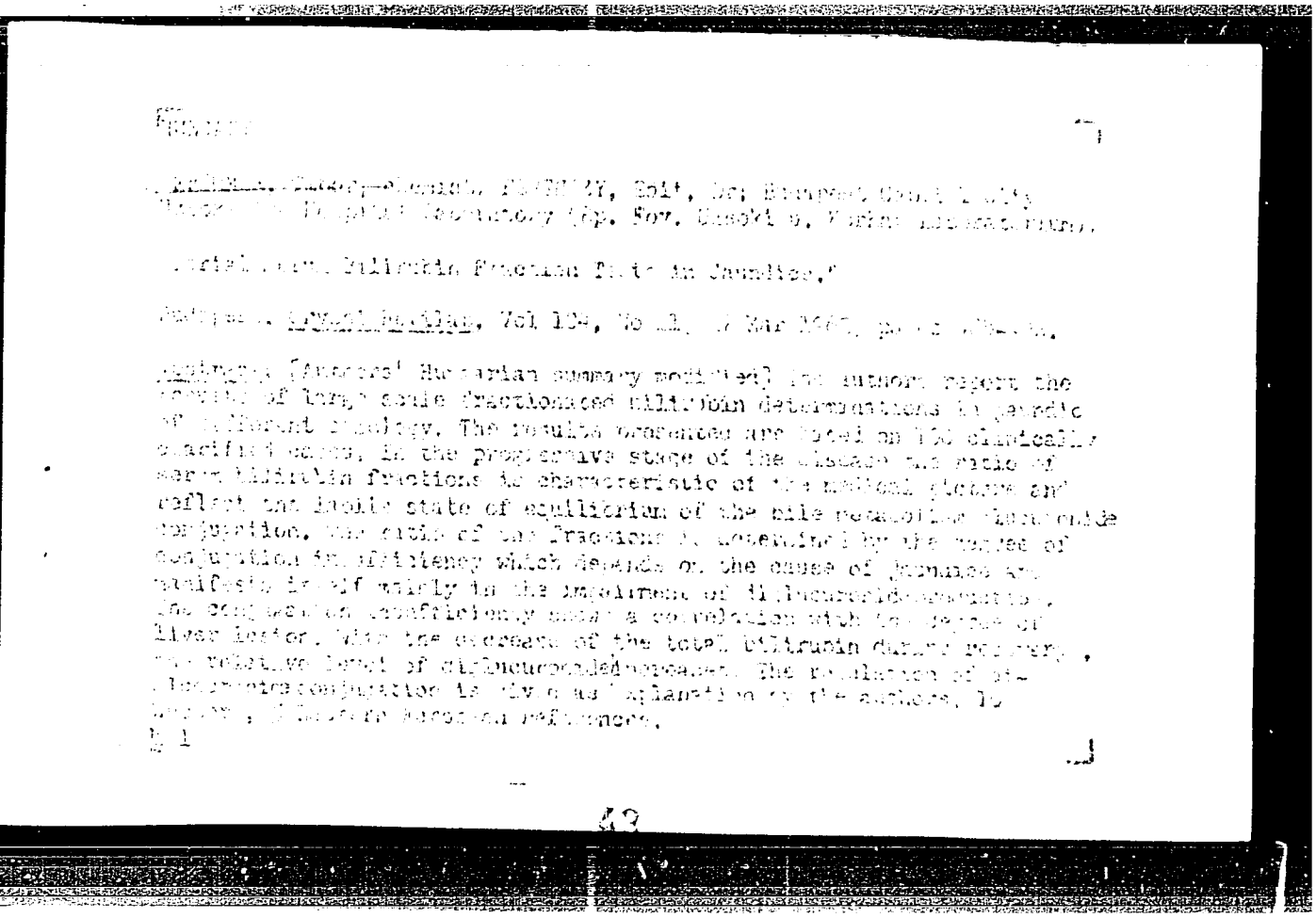

[illegible]

[illegible], Chemist, [illegible], Edit, Dr; [illegible] Laboratory (Sp. Fov. [illegible] Laboratorium).

"[illegible] Bilirubin Fraction Tests in Jaundice."

[illegible], Vol 104, No [illegible], [illegible] Mar [illegible], [illegible].

[illegible] [Authors' Hungarian summary modified] The authors report the [illegible] of large scale fractionated bilirubin determinations in jaundice of different etiology. The results presented are based on [illegible] clinically [illegible] cases. In the progressive stage of the disease the ratio of serum bilirubin fractions is characteristic of the medical picture and reflect the labile state of equilibrium of the bile metabolism glucuronide conjugation. The ratio of the fractions is determined by the degree of conjugation insufficiency which depends on the cause of jaundice and manifests itself mainly in the impairment of diglucuronide production. The conjugation insufficiency shows a correlation with the degree of liver lesion. With the decrease of the total bilirubin during recovery, the relative level of diglucuronide increases. The regulation of diglucuronide conjugation is given as explanation by the authors. [illegible] Western European references.

[illegible]

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KREMLYAKOV, A.

25318 KREMLYAKOV, A. Umelo berechb tekhniku svyazi v lagernyy period voen. Svyazist, 1948, No. 7, S. 40-43

SO: Letopis'Zhurnal, Statey, No. 30, Moscow, 1948

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410(

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KREMLYANSKIY, Aleksandr Nikolayevich; KHLEBNIKOV, L.L., redaktor; SEMENOVA, M.M., redaktor izdatel'stva; TIKHONOVA, Ye.A., tekhnicheskiy redaktor

[Manual for the ship's handler] Pamiatnaia knizhka sudovoditelia. Moskva, Izd-vo "Morskoi transport," 1956. 229 p. (MLRA 10:2)
(Seamanship)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KREMLYANSKIY, A.N.; SAVEL'YEV, A.A., red.; DIZHUR, I.M., red.;
TIKHONOVA, Ye.A., tekhn.red.

[Shiphandler's handbook] Pamiatnaia knizhka sudovoditelia.
Pod red. A.A.Savel'eva. Izd.3., rasshirennoe i dop. Moskva,
Izd-vo "Morskoi transport," 1958. 421 p. (MIRA 12:9)
(Ship handling--Handbooks, manuals, etc.)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KREMLYANSKIY, Aleksandr Nikolayevich, kapitan dal'nego plavaniya; STUPAKOVA, L.A., red.; TIKHONOVA, Ye.A., tekhn. red.

[Ship captain's guide] Pamiatnaia knizhka sudovoditelia. 4. izd. Moskva, Izd-vo "Morskoi transport," 1962. 440 p. (MIRA 15:6)
(Shipping--Handbooks, manuals, etc.)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

AVAZOV, T.N.; KHEMMER, A.M.; KHAIDAROV, S.

Phenols in the formation waters of the Gazli gas and oil field and adjacent areas. Dokl. AN Uz. SSR 21 no. 11:46-49 '64. (MIRA 18:12)

1. Institut geologii i razrabotki neftyanykh i gazovykh mestorozhdeniy Gosudarstvennogo geologicheskogo komiteta SSSR. Submitted June 21, 1963.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

Kremmer, I

RUMANIA/Theoretical Physics B-5

Abs Jour : Referat Zhur - Fizika, No 5, 1957, No 10877

Author : Borneas, M., Kremmer, I.

Inst : o

Title : The Use of Poly-Operators.

Orig Pub : Studii si cercetari stiint. Acad. RPR. Baza Timisoara Ser. 1, 1955, 2, No 1-4, 51-58

Abstract : The concept of the poly-operator, introduced by one of the authors earlier (Bornes, M., Studii si cercetari stiint. Acad. RPR, Baza Timisoara, 1953) are formulated in the following manner. The poly-operator $\hat{\hat{B}}$ is determined by the matrix B_{ik}, which satisfies the relation $(\hat{\hat{B}}\psi)_i = \hat{B}_{ik}\psi_k$, where $\psi_k = \psi(\underset{\sim}{x}, t, s_k)$ are values

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

RUMANIA/Theoretical Physics B-5

Abs Jour : Referat Zhur - Fizika, No 5, 1957, No 10877

assumed by the wave function $\psi(x, t, s)$ of a system with an internal degree of freedom s. Using this concept, the authors establish the poly-operator form of the Dirac equation, which differs substantially from the usual one in view of the diagonal nature of the momentum poly-operator $\hat{\hat{p}}_\mu$.

Next, the authors find the poly-equation for a particle with negative mass and calculate the energy of the non-relativistic magnetic electron in an external magnetic field. In conclusion, considerations that relate the method of poly-operators with the method of associated matrices are raised.

Card 2/2

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KREMER, I.

4

The distribution law of ferromagnetic domains according to the "coercive field" criterion in a phenomenon of irreversible magnetization (phenomenon of Procopiu). B. Rothenstein and I. Kremmer (Polytech. Inst., Timişoara, Romania). *Acad. rep. populare Romîne, Baza cercetări ştiinţ. Timişoara, Studii cercetări, ştiinţ., Ser. ştiinţe chim.* 6, No. 1–2, 157–63 (1959).—The phenomenon of Procopiu is observed when a ferromagnetic sample is placed in a continuous magnetic field of const. intensity, on which is superimposed an alternating magnetic field. If the amplitude of the latter is increased continuously up to a specific value and then decreased continuously to 0, the sample exhibits a residual magnetism in the direction of the continuous field. The residual magnetism depends on the effective intensity of the alternating field. The Procopiu phenomenon is due to the irreversible displacement of the Bloch walls under the influence of the magnetic fields, and is a consequence of the gaussian distribution law of ferromagnetic domains according to the "coercive field" criterion. S. A. Steen

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

ROTHENSTEIN, B.; KREMMER, I.

Law of distributing ferromagnetic fields according to the criterion of coercive force in a phenomenon of irreversible magnetization; the Procopiu phenomenon. Studii chim Timisoara 6 no.1/2:157-163 Ja-Je '60. (EEAI 10:3)

1. Institutul politehnic Timisoara, Laboratorul de fizica.
(Magnetic fields) (Coercive force (Magnetic))
(Distribution (Probability theory))

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

ROTHENSTEIN, B.; KREMMER, I.

An apparatus for measuring the coercive field of the test pieces taking part in an electrochemical process. Studii mat Timisoara 7 no.1/2: 205-207 Ja-Je '60. (EEAI 10:4)

(Coercive force (Magnetic)) (Magnetometer)
(Hydrogen) (Magnetism) (Electrolysis)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

NADASAN, St.; ROTHENSTEIN, B.; HOROVITZ, B.; SAFTA, V.; KREMMER, I.; GOLEA, A.

Influence of cathodic hydrogen on the fatigue resistance of carbon steel covered with nickel by electrolytic method. Studii tehn Timisoara 10 no.2:241-247 Jl-D '63.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

HOROVITZ, Bernard, conf. ing.; KRAMER, Iosif, ing.

Experimental determination of the equivalent bending elasticity module of v-belts. Industria uscara 11 no.6:300-303 Je '64.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KERTESZ, Tivadar, dr.; KREMMER, Tibor, vegyeszmernok; ROTTER, Lilian K., dr.; FERENCZY, Edit, dr.

Determination of serum glutamic oxalic acid transaminase in myocardial infarct. Orv.hetil. 101 no.45:1596-1599 6 N '60.

1. Fovarosi Uzsoki u. Korhaz Laboratoriuma.
(MYOCARDIAL INFARCT blood)
(TRANSAMINASES blood)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KREMMER, Tibor, okleveles vegyesz (Budapest)

New methods of investigation in the differential diagnosis of jaundices. Term tud kozl 6 no.2:77-79 F '62.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KREMMER, Tibor, okl. vegyesz; FERENCY, Edit, dr.; HORVATH, Ferenc, dr.

Direct bilirubin. (Preliminary communication). Magy Belorv. arch. 15 no.3:110-111 Je '62.

1. Fovarosi Uzsoki-utcai Korhaz Laboratoriuma es I. sz. Bel Osztalya.
(BILIRUBIN)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KREMMER, Tibor, okl. vegyesz; FERENCZY, Edit, dr.

Value of fractional bilirubin determination in differential diagnosis of jaundice. Orv. hetil. 103 no.27:1262-1266 8 Jl '62.

1. Bp. Fov. Uzsoki u. Korhaz, Laboratorium.

(JAUNDICE diag) (BILIRUBIN chem)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

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KREMMER, Tibor, okl. vegyesz; FERENCZY, Edit, dr.

Serial examination of serum bilirubin fractions in jaundice. Orv. hetil. 104 no.11:488-492 17 Mr '63.

1. Bp. Fov. Uzsoki u Korhaz Laboratorium.
(BILIRUBIN) (JAUNDICE, OBSTRUCTIVE) (HEPATITIS, INFECTIOUS)
(CHOLELITHIASIS) (LIVER CIRRHOSIS) (BLOOD CHEMICAL ANALYSIS)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

HUNGARY

KREMMER, Tibor, dipl. chemist, FERENCZY, Edit, Dr; Capital City Uzsoki Street Hospital (Fovarosi Uzsoki Utcai Kornaz), Laboratory.

"Determination of Serum P-Lipoids in Cases of Jaundice. Evaluation of the Jirgl Test (Preliminary Communication)."

Budapest, Orvosi Hetilap, Vol 104, No 30, 28 July 63, p 1408.

Abstract: [Authors' Hungarian summary] The Jirgl test is the first relatively simple liver function test which indicates the specific, selective disturbance in the lipoid-protein metabolism in jaundice. This specificity limits the favorable evaluation of the test diagnostically in cases of occlusion of the choledochus and calls attention to the general phenomenon of jaundice. 5 Western, 3 Hungarian references.

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KREMMER, Tibor, okleveles vegyesz; FERENCZY, Edit, dr.

Study of serum lipoproteins in jaundice. The role of abnormal lipoproteins in the Jirgl test. Orv. hetil. 106 no.9:405-407 28 F '65

1. Fovarosi Uzsoki utcai Korhaz, Laboratoriuma (Osztalyvezeto foorvos: Kertesz, Tivadar, dr.).

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

L 9767-66

ACC NR: AP6001962 SOURCE CODE: HU/0018/65/017/001/0098/0100

AUTHOR: Kremmer, Tibor; Hangos, Gyorgy--Khangosh, D.

ORG: Laboratory, Uzsoki Street Metropolitan Hospital, Budapest (Fovarosi Uzsoki-u. Korhaz Laboratoriuma); Surgery Department, Tetenyi Ave Hospital (Tetenyi-uti Korhaz Sebeszeti Osztalya)

TITLE: Complexometric determination of the Ca and Mg content of bile

SOURCE: Kiserletes Orvostudomany, v. 17, no. 1, 1965, 98-100

TOPIC TAGS: digestive system, biochemistry, analytic chemistry

ABSTRACT: A rapid and accurate complexometric method is described for the determination of Ca and Mg ions in the bile and intestinal content. The method consists of a decomposition of interfering bile pigments with a base and their removal with chloroform. Following this, the Ca and Mg ions can be measured by complexometry. Orig. art. has: 1 table. [JPRS]

SUB CODE: 06 / SUBM DATE: 03Dec63 / ORIG REF: 003 / OTH REF: 001

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APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KREMNEV, A.A. [Kremn'ov, O.O.]; KOZLOV, Ye.M.[Kozlov, IE.M.]

Coefficient of unsteady heat exchange in blind passages of mines with fluctuating temperature of the ventilation air [with summary in English]. Dop.AN URSR no.3:307-310 '61. (MIRA 14:3)

1. Institut teploenergetiki AN USSR. Predstavleno akademikom AN USSR A.N.Shcherbanem.
(Mine ventilation)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KREMNEV, Afanasii Ivanovich

[Chita Province; a brief sketch of its nature, economy, and culture] Chitinskaya oblast'; kratkii ocherk prirody, ekonomiki i kul'tury. Chitinskoe knizhnoe izd-vo, 1955. 144 p.
(Chita Province) (MLRA 9:1)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KREMNEV, Afanasiy Ivanovich; KOMAROV, V.F., retsenzent; DENIS'YEV, V.I., retsenzent; LOBOVIKOV, T.S., red.; SOKOL'SKAYA, Zh.M., red. izd-va; REYZMAN, Ye.Ya., tekhn.red.

[Economics of the Soviet lumber industry] Ekonomika lesnoi promyshlennosti SSSR. Moskva, Goslesbumizdat, 1958. 181 p. (MIRA 12:2)

(Lumbering--Finance)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KREMNEV, Afanasiy Ivanovich; MOROZOV, N., red. [deceased]; YURGANOVA, M., tekhn.red.

[Chita Province; brief study of the nature, economy and culture] Chitinskaia oblast'; kratkii ocherk prirody, ekonomiki i kul'tury. Chita, Chitinskoe knizhnoe izd-vo, 1959. 158 p. (MIRA 12:12)
(Chita Province)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KOTLYAREVSKIY, I.M.; KOZLOV, I.G.

Using the high-precision AM-13 aeromagnetometer in the solution of geological mapping problems in Uzbekistan. Razved. i okh. nedr. 30 no.6:35-39 Je '64. (MIRA 17:10)

1. Uzbekskiy geofizicheskiy trest.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

TAL'-VIRSKIY, B.B.; KOTLYAREVSKIY, L.N.; KRUGNEV, I.G.

New data on the structure of the basement in the Fergana intermontane depression. Uzb. geol. zhur. 8 no.5;46-52 '64. (MIRA 18:5)

1. Uzbekskiy geofizicheskiy trest.

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

L 27861-65 EWT(1)/FCC/EEC(t)/EWA(h) Pc-4/Pl-4/Pab GM

ACCESSION NR: AR5003630 S/0169/64/000/011/D023/D023

SOURCE: Ref. zh. Geofizika, Abs. 11D150

AUTHORS: Kotlyarevskiy, L. N.; Kremnev, I. G.

TITLE: Results of experiments with the AM-13 high-precision aeromagnetometer

CITED SOURCE: Sb. Geofiz. priborostr., Vyp. 18. L., Nedra, 1964, 115-118

TOPIC TAGS: magnetometer, aerial magnetic surveying/AM-13

TRANSLATION: A brief report is presented of experimental work with the AM-13 aeromagnetometer, carried out in 1960--1961 by the aeromagnetic party of Uzbekskiy geofizicheskiy trest (Uzbek Geophysical Trust). The investigations have shown that in order to exclude the deviation noise it is advantageous to do the measurements with a

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L 27861-65
ACCESSION NR: AR5003630

gondola cable 20--25 meters long. A connection is established between the variational curve δT and the null-drift curve. It is shown that if δT of the variations is correctly taken into account, it is possible to plot the magnetic field relative to the control route without using reference and secant routes. A. Lozinskaya.

SUB CODE: ES ENCL: 00

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APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KREMNEV, L. S., (Engr.); RAKHSHTADT, A. G. (Cand. Tech. Sci.; Docent);

"A Method of Determining Energy Dissipation in Elastic Vibrations," *Termicheskaya obrabotka i prochnost' metallov i splavov; sbornik statey* (Heat Treatment and Strength of Metals and Alloys; Collection Articles) Moscow, Mashgiz, 1958, 177 p.

A new method if proposed for determining the energy dissipation in the vibrations of a specimen fized at one end in a test stand designed by S. O. TSOBKALLO. The method is based on the determination of the path of motion of the specimen. The authors obtain equations that give the relationship between the elastic energy stored in the specimen, the amplitude of vibrations theamount of energy dissipated, and the damping factor. The equations further account for the magnitude of working stresses imposed on the specimens and also determine energy dissipstion per cycle, which is not obtainable ordinarily with the damping factor alone. These considerations, when applied to N36KhTYu steel, show that dissipated energy per cucle as a funcgion of stress loading rises with increased stress, which is explained as the effect of microplastic deformation. At the same time,the higher the resistance of the metal to small plastic deformations, i. e., the higher the elastic limit, the smalller the dissipation increment. In particular, minimum values for the dissipation increment and its rate of increase are observed in specimens tested after hardening from a temperature of 950°C. and aging to 700°for 2 hours, when their elastic limit is at its maximum.

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

GELLER, Yu. A.; KREMNEV, L.S.; OLESOVA, TS.L.

Rapid steel with reduced carbide heterogeneity. Metalloved. i term. obr. met. no.6:25-35 Je '61. (MIRA 14:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy instrumental'nyy institut.
(Tool steel--Metallography)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

S/148/61/000/009/010/012
E193/E383

AUTHORS: Kremnev, L.S. and Geller, Yu.A.

TITLE: The effect of small additions of titanium and nitrogen on the properties of high-speed cutting steel

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, no. 9, 1961, 129 - 137

TEXT: The main problem in producing the standard P18 (R18) and P9 (R9) high-speed cutting steels is to attain uniform distribution of carbides on which the uniformity of the grain size depends. Satisfactory distribution of carbides can be ensured by reducing the tungsten and chromium content so as to reduce the proportion of free carbides without decreasing the quantity of these elements in the solid solution. Steels of this type, however, show a tendency to excessive grain growth. This effect can be prevented by increasing the V content to 2 - 2.5%; in this case, however, steel becomes difficult to grind, which causes considerable difficulties in the fabrication of tools of complex shape. The object of the present investigation was to study the possibility of overcoming these

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difficulties by the addition of elements which would inhibit grain growth of steel during pre-hardening heating without increasing the free-carbide content. Ti (a carbide-forming element) and N, which forms stable nitrides, were used for this purpose. The chemical analysis of the experimental alloys is given in a table. The maximum quantity of N was 0.01 - 0.02 - 0.03%. Several conclusions were reached.

1) Addition of 0.1 - 0.2% Ti or 0.02 - 0.03% N with 0.1 - 0.2% Al inhibits grain growth of medium-tungsten content, high-speed cutting steel, decreases its sensitivity to overheating and increases its strength.

2) The effect of Ti as a grain refining and strengthening addition is more pronounced that that of nitrogen. In Fig. 3, constructed for specimens quenched from various temperatures and tempered (three times) for 1 hour at 550 ^{o}C, the bending strength (σ, kg/mm^2) is plotted against the quenghing temperature (^{o}C). Curves 2 and 1 relating, respectively, to steel without Ti and with 0.26% Ti. In fig. 7 (constructed for similarly heat-treated specimens) σ is plotted against the quenching

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temperature (°C), Curves 1 and 2 relating, respectively, to steel containing Ti and N additions.

3) The proportion of residual austenite unaffected by addition of N is decreased by the addition of Ti to an extent, illustrated in Fig. 4a, where the proportion of residual austenite (A, %) is plotted against the hardness temperature (°C) for steel containing 3% Cr and no Ti (top curve), steel with 3% Cr and 0.26% Ti (dotted curve with an inflection point), steel with 2.68% Cr and no Ti (horizontal dotted curve) and steel with 2.67% Cr and 0.16% Ti (bottom curve).

4) The quantity of residual austenite in a hardened steel depends not only on the composition of austenite but also on its grain size attained during heating prior to hardening. With increasing grain size the stability of austenite increases and so does the quantity of residual austenite. It is for this reason that the proportion of residual austenite is reduced in the presence of Ti but is not affected by additions of N.

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

S/148/61/000/009/010/012
E193/E383

The effect of ....

There are 11 figures, 1 table and 5 references: 4 Soviet-bloc and 1 non-Soviet-bloc. The English-language reference is: Ref. 4 - A. Carter, Journal Iron and Steel Inst., 83, 11, 1955.

ASSOCIATION: Moskovskiy stankoinstrumental'nyy institut (Moscow Machine and Instrument Institute)

SUBMITTED: February 3, 1961

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APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

S/148/61/000/011/010/018
E111/E480

AUTHORS: Geller, Yu.A., Kremnev, L.S.

TITLE: The effect of chromium on the properties of high-speed cutting steel

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no.11, 1961, 129-136

TEXT: There is evidence that chromium has an appreciable effect on the working and properties of high-speed steel. The chromium content of such steels is fixed within the same range (4 to 4.5%) in the USSR and abroad for all grades, irrespective of wide variations in tungsten, molybdenum and vanadium concentrations. Work reported on the effect of chromium on the cutting properties (Ref.2: H. Peltzgutter. Stahl u. Eisen, H. 12, 1924) and hardenability (Ref.4: E. Gudremon. Special steels. v.11, Metallurgizdat, 1959) or on the phase composition (Ref.6: N.T.Chebotarev, Izv. AN SSSR, Seriya fizicheskaya, no.1, 1951; Ref.8: F.Kaiser, M.Cohen, Metal Progress, no.6, 1952) does not fully represent the influence of this element. Nor does it enable the optimum chromium content to be found for various contents of other elements, especially tungsten. To study this problem, the

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authors investigated steels with 3.63 to 18% W, up to 4.2% Cr, 0.72 to 0.88% C and 1.0 to 1.7% V. These were induction melted, cast into 12 kg ingots and forged into 12 x 12 mm bars. After various heat treatments, phase analysis, solid-solution analysis, hardness measurements and determination of cutting properties and carbide distribution were carried out. The authors draw the following conclusions. In high-speed steel, chromium affects various transformations taking place during hardening and heat treatment, its influence is therefore very complex. Its main effect is on high-temperature transformations preceding quenching. As it is present in the form of a complex tungsten carbide, it lowers the solubility of this carbide in the austenite; the higher the chromium content in the carbide (and therefore in the steel), the greater the effect. Steels with less than 8 to 10% tungsten, in which grain growth begins at lower temperatures, require more chromium to obtain saturation of the solid solution with tungsten while keeping the grain small. The tungsten carbides precipitated on tempering form in larger quantities at lower temperatures and also coagulate at a somewhat reduced heating temperature if they contain more chromium. It is for

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this reason that, in steels with up to 8 - 10% W, the secondary hardness is raised but red hardness is reduced by chromium. Chromium hinders the transformation of the complex tungsten carbide into the simpler one insoluble in austenite. However, it increases carbide heterogeneity in steel with a higher carbide content (more tungsten) and this impairs strength. At the same time, chromium improves hardenability because it promotes a fuller solution of tungsten carbides and the formation of chromium carbides which go into solid solution on heating to 1100 - 1150°C. For improving the properties of high-speed cutting steel, the chromium content should be fixed in relation to that of tungsten. With up to 10% W, about 4% Cr is required to saturate the solid solution at lower temperatures, thus keeping the grains small, and to obtain a high secondary hardness. In steels containing over 10 to 12% W, the chromium content should be reduced to 3% in order to retain a fine grain size on high-temperature heating and to reduce carbide heterogeneity, increase strength and red hardness. There are 8 figures, 2 tables and 11 references: 8 Soviet-bloc and 3 non-Soviet-bloc. The two references to English language publications read as follows: Ref.1: P. Malkiewiez. Journ. Iron

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The effect of chromium ... S/148/61/000/011/010/018
E111/E480

and Steel Inst., v.193, 1959, 1; Ref.8: as quoted in text.

ASSOCIATION: Moskovskiy stanko-instrumental'nyy institut
(Moscow Institute of Machine Tools and Instruments)

SUBMITTED: April 4, 1961

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APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

ACCESSION NR: AP4019814 S/0279/64/000/001/0136/0142

AUTHORS: Kremnev, L. S. (Moscow); Geller, Yu. A. (Moscow)

TITLE: Tungsten effect on the properties of high speed steels

SOURCE: AN SSSR. Izv. Metallurgiya i gornoye delo, no. 1, 1964, 136-142

TOPIC TAGS: steel, high-speed steel, tungsten, vanadium, WV steel, steel grain size, carbide phase in steel, WV effect on carbide, M_6C content in steel, VC content in steel, P18 high speed steel

ABSTRACT: Experiments were performed to study the effect of tungsten on the properties of high-speed steels, particularly its effect on the grain size and on the quantity of carbide phase. The samples contained 4-18% W. It was established that the steel properties do not bear a direct linear relation to W content. There were two characteristic W concentrations in steels; one of 12-13%, the other of 7-8% (at 1.5% vanadium). Steels with 12-13% W contained a carbide phase M_6C rich in W in the presence of vanadium; steels with 18% W and free of vanadium also contained this phase. The increase in W content from 12 to 18% did not change substantially the quantity of M_6C. Experiments showed that the greatest

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ACCESSION NR: AP4019814

quantity of vanadium was dissolved in M_6C of the 12-13%W steels in which the quantity of solid vanadium carbide VC was small. For this reason hot strength of vanadium-bearing high-speed steels reaches its maximum at 12-13% of W concentration. The technical properties of steel containing 12-13% W and 1.5-1.9% of V did not differ from those of the common P18 steel. Tungsten concentration of 7-8% was the necessary minimum for achieving the secondary hardness in high-speed steels. Steel of this type may be used as a substitute for P18 steel in producing cutting tools for work under light cutting loads. Orig. art. has: 1 table and 6 figures.

ASSOCIATION: none

SUBMITTED: 10Jul63 DATE ACQ: 31Mar64 ENCL: 00

SUB CODE: ML NO REF SOV: 003 OTHER: 004

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826410

KREMNEV, L.S. (Moskva); GELLER, Yu.A. (Moskva)

Effect of tungsten on the properties of high-speed steels. Izv. AN SSSR. Met. i gor. delo no.1:136-142 Ja-F '64. (MIRA 17:4)

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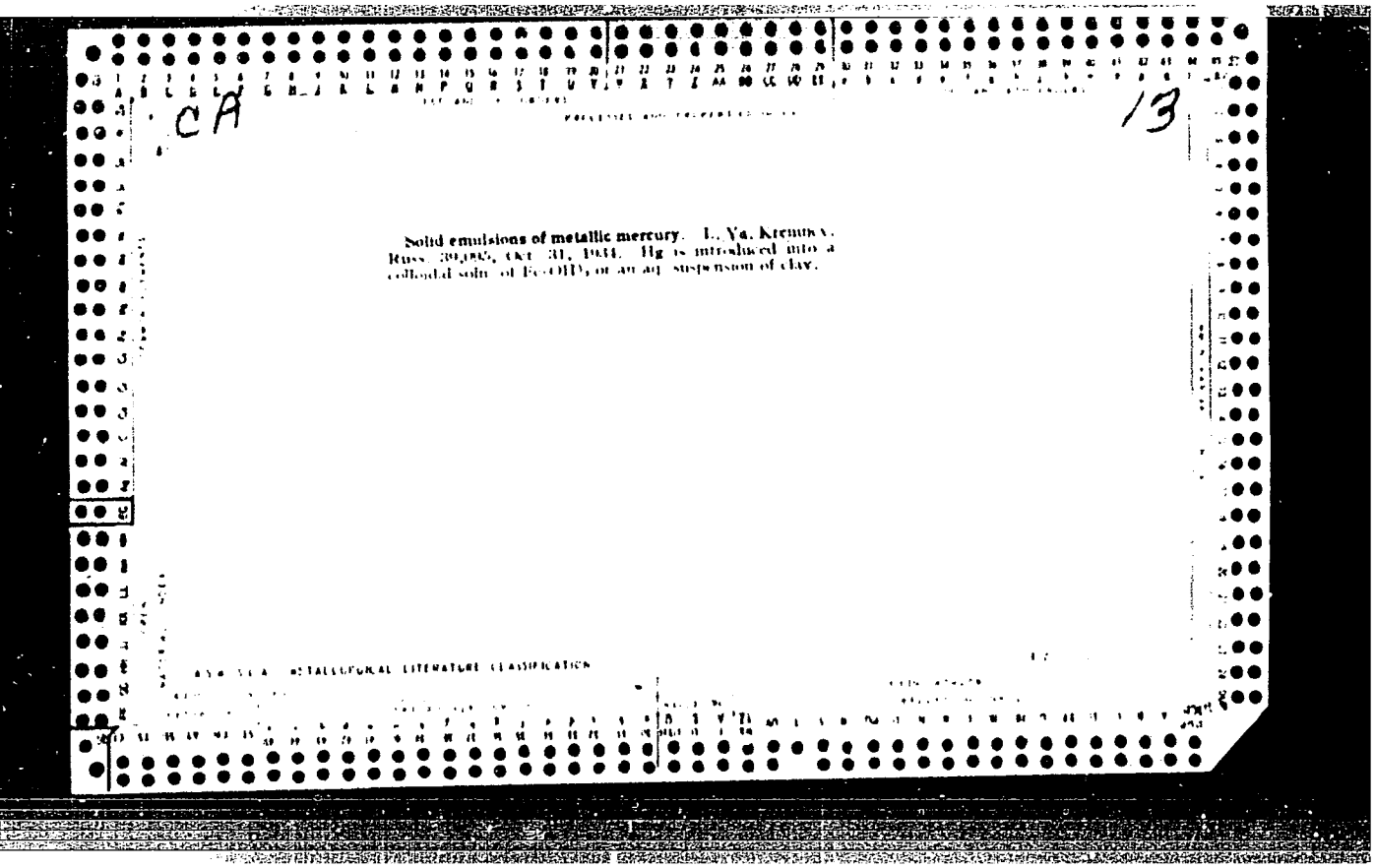

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Solid emulsions of metallic mercury. L. Ya. Kremnev. Russ. 39,986, Oct. 31, 1934. Hg is introduced into a colloidal soln. of $Fe(OH)_3$ or an aq. suspension of clay.

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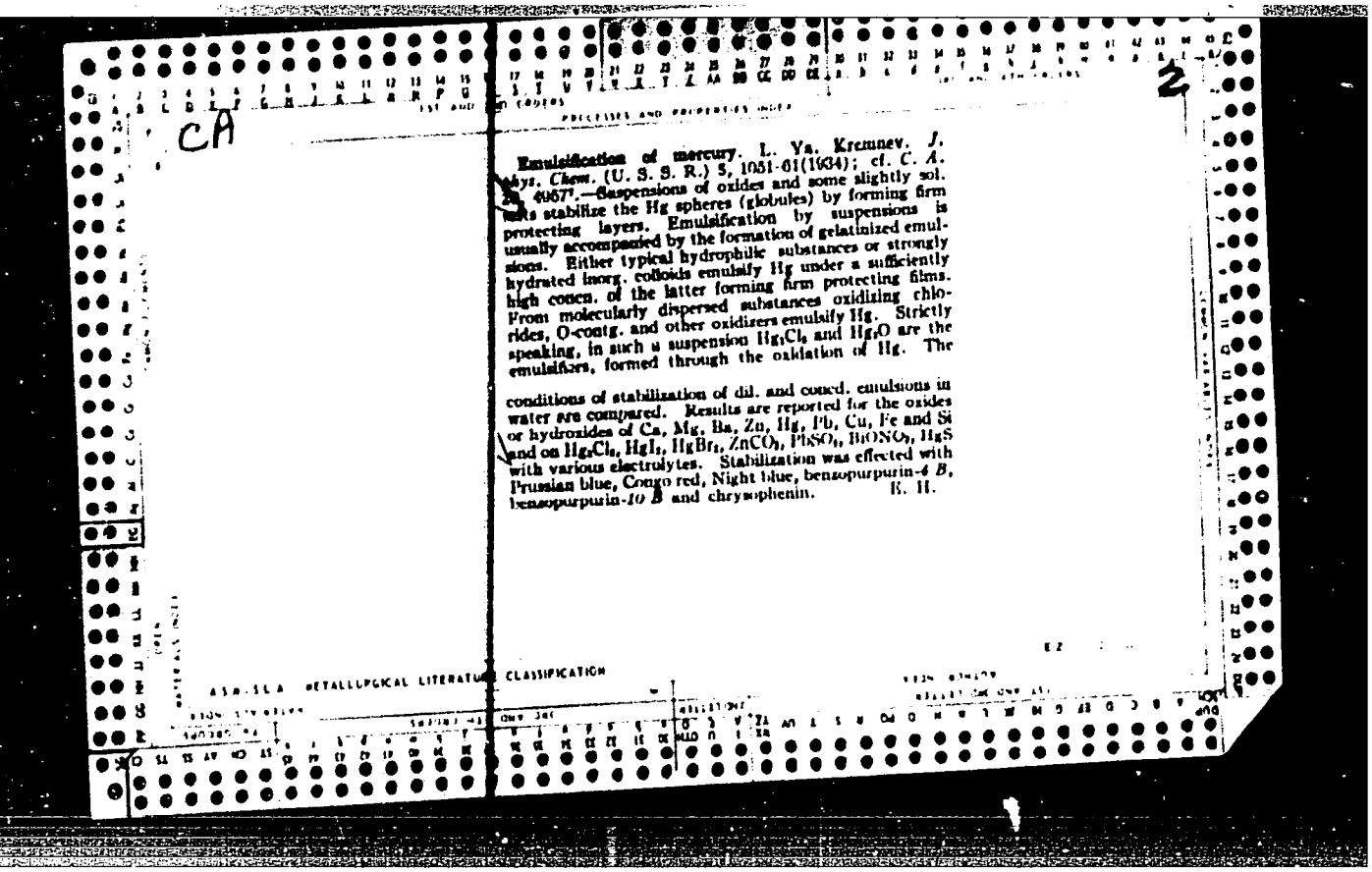

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Emulsification of mercury. L. Ya. Kremnev. *J. Phys. Chem.* (U. S. S. R.) 5, 1051-61(1934); cf. *C. A.* 4967.—Suspensions of oxides and some slightly sol. salts stabilize the Hg spheres (globules) by forming firm protecting layers. Emulsification by suspensions is usually accompanied by the formation of gelatinized emulsions. Either typical hydrophilic substances or strongly hydrated inorg. colloids emulsify Hg under a sufficiently high concn. of the latter forming firm protecting films. From molecularly dispersed substances oxidizing chlorides, O-contg. and other oxidizers emulsify Hg. Strictly speaking, in such a suspension Hg_2Cl_2 and Hg_2O are the emulsifiers, formed through the oxidation of Hg. The conditions of stabilization of dil. and concd. emulsions in water are compared. Results are reported for the oxides or hydroxides of Ca, Mg, Ba, Zn, Hg, Pb, Cu, Fe and Si and on Hg_2Cl_2, HgI_2, $HgBr_2$, $ZnCO_3$, $PbSO_4$, $BiONO_3$, HgS with various electrolytes. Stabilization was effected with Prussian blue, Congo red, Night blue, benzopurpurin-*4 B*, benzopurpurin-*10 B* and chrysophenin. K. H.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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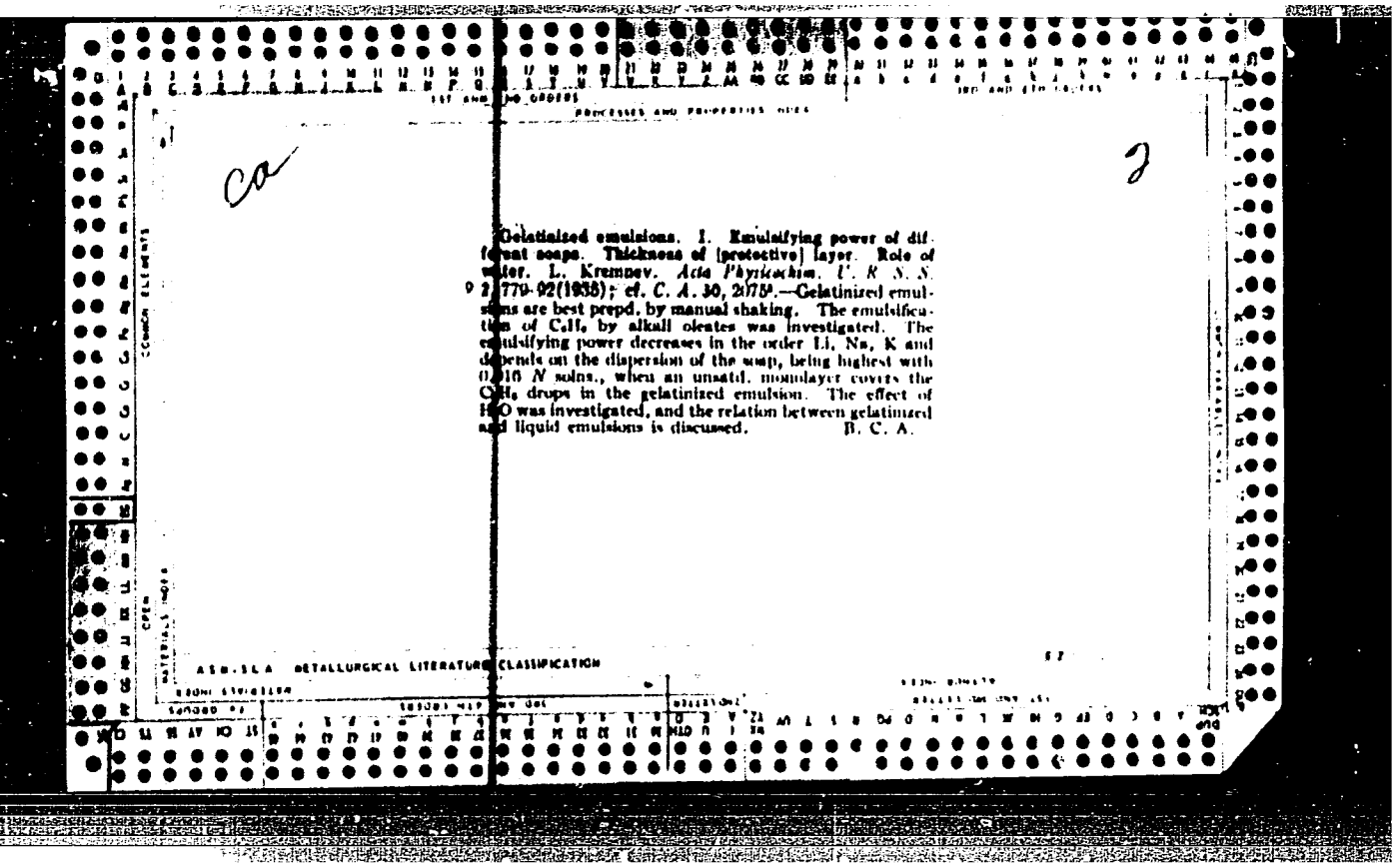

Ca

2

Gelatinized emulsions. I. Emulsifying power of different soaps. Thickness of [protective] layer. Role of water. L. Kremnev. *Acta Physicochim. U. R. S. S.* 9 2, 779-92(1938); *cf. C. A.* 30, 2175⁹.—Gelatinized emulsions are best prepd. by manual shaking. The emulsification of C_6H_6 by alkali oleates was investigated. The emulsifying power decreases in the order Li, Na, K and depends on the dispersion of the soap, being highest with 0.016 *N* solns., when an unsatd. monolayer covers the C_6H_6 drops in the gelatinized emulsion. The effect of H_2O was investigated, and the relation between gelatinized and liquid emulsions is discussed. B. C. A.

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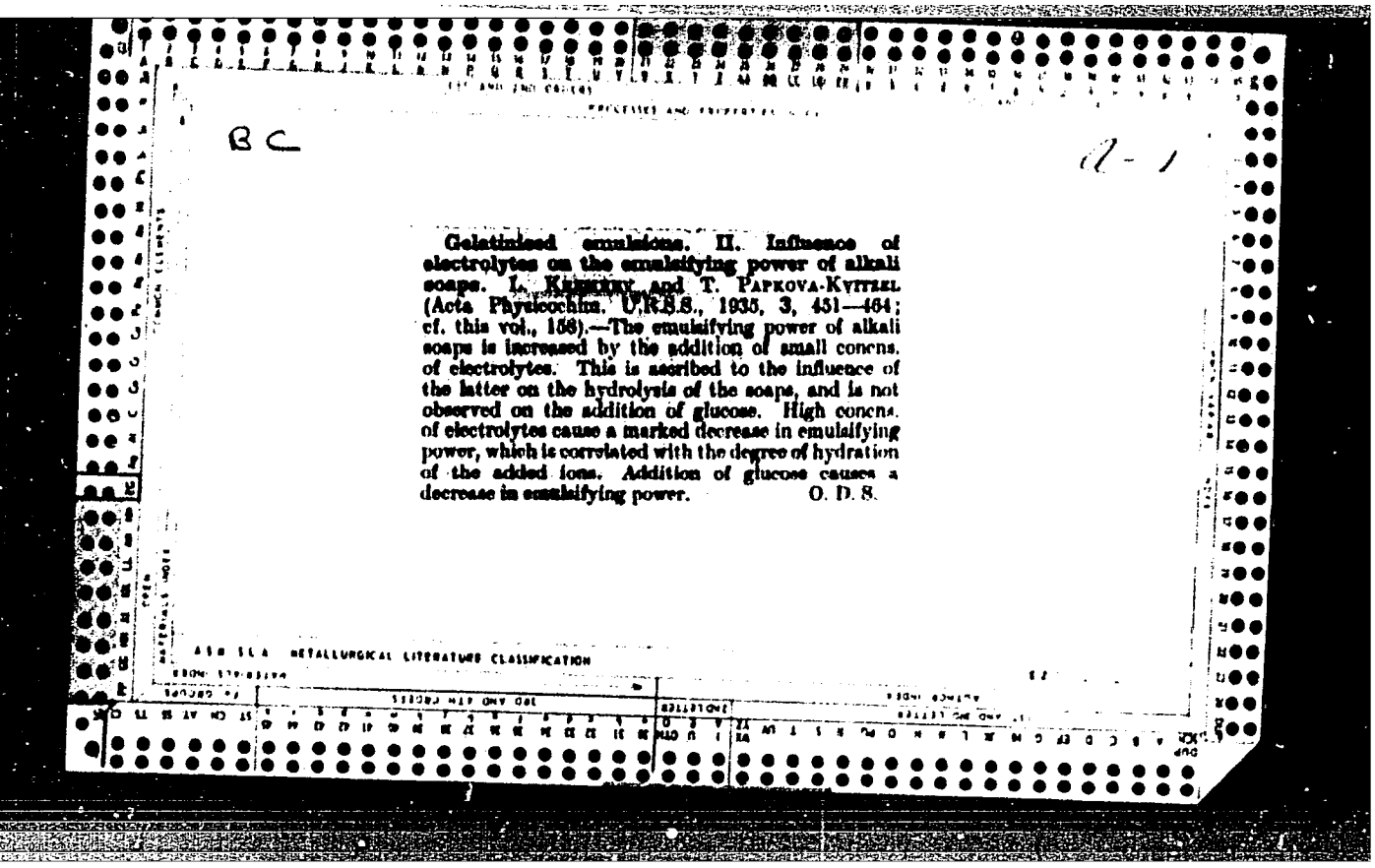

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Gelatinised emulsions. II. Influence of electrolytes on the emulsifying power of alkali soaps. L. Kremnev and T. Papkova-Kvitzel (Acta Physicochim. U.R.S.S., 1935, 3, 451—464; cf. this vol., 158).—The emulsifying power of alkali soaps is increased by the addition of small concns. of electrolytes. This is ascribed to the influence of the latter on the hydrolysis of the soaps, and is not observed on the addition of glucose. High concns. of electrolytes cause a marked decrease in emulsifying power, which is correlated with the degree of hydration of the added ions. Addition of glucose causes a decrease in emulsifying power. O. D. S.

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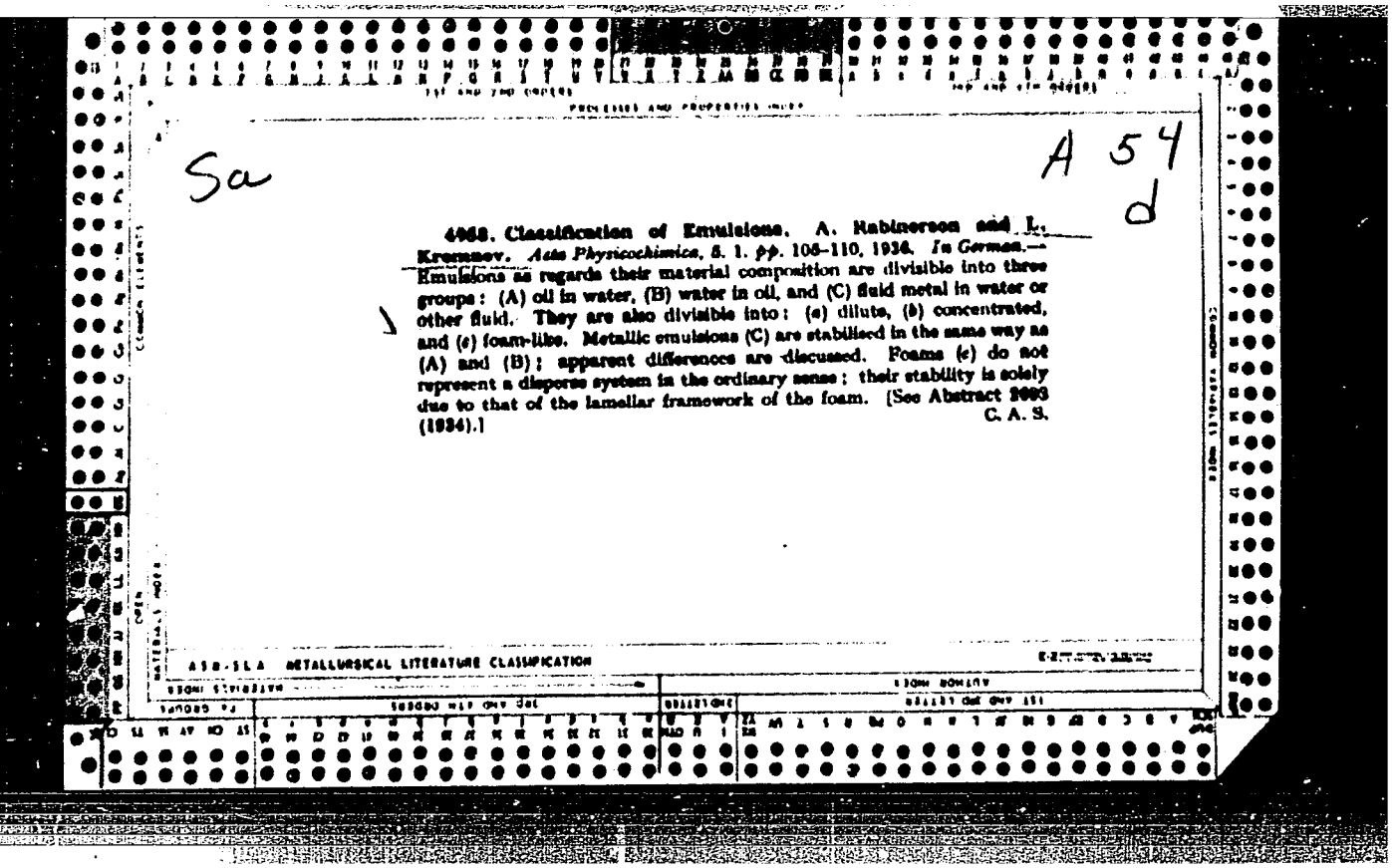

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4968. **Classification of Emulsions.** A. Rabinerson and I. Kremnev. *Acta Physicochimica*, 8. 1. *pp.* 105–110, 1938. *In German.*—Emulsions as regards their material composition are divisible into three groups: (A) oil in water, (B) water in oil, and (C) fluid metal in water or other fluid. They are also divisible into: (*a*) dilute, (*b*) concentrated, and (*c*) foam-like. Metallic emulsions (C) are stabilised in the same way as (A) and (B); apparent differences are discussed. Foams (*c*) do not represent a disperse system in the ordinary sense: their stability is solely due to that of the lamellar framework of the foam. [See Abstract 2093 (1934).] C. A. S.

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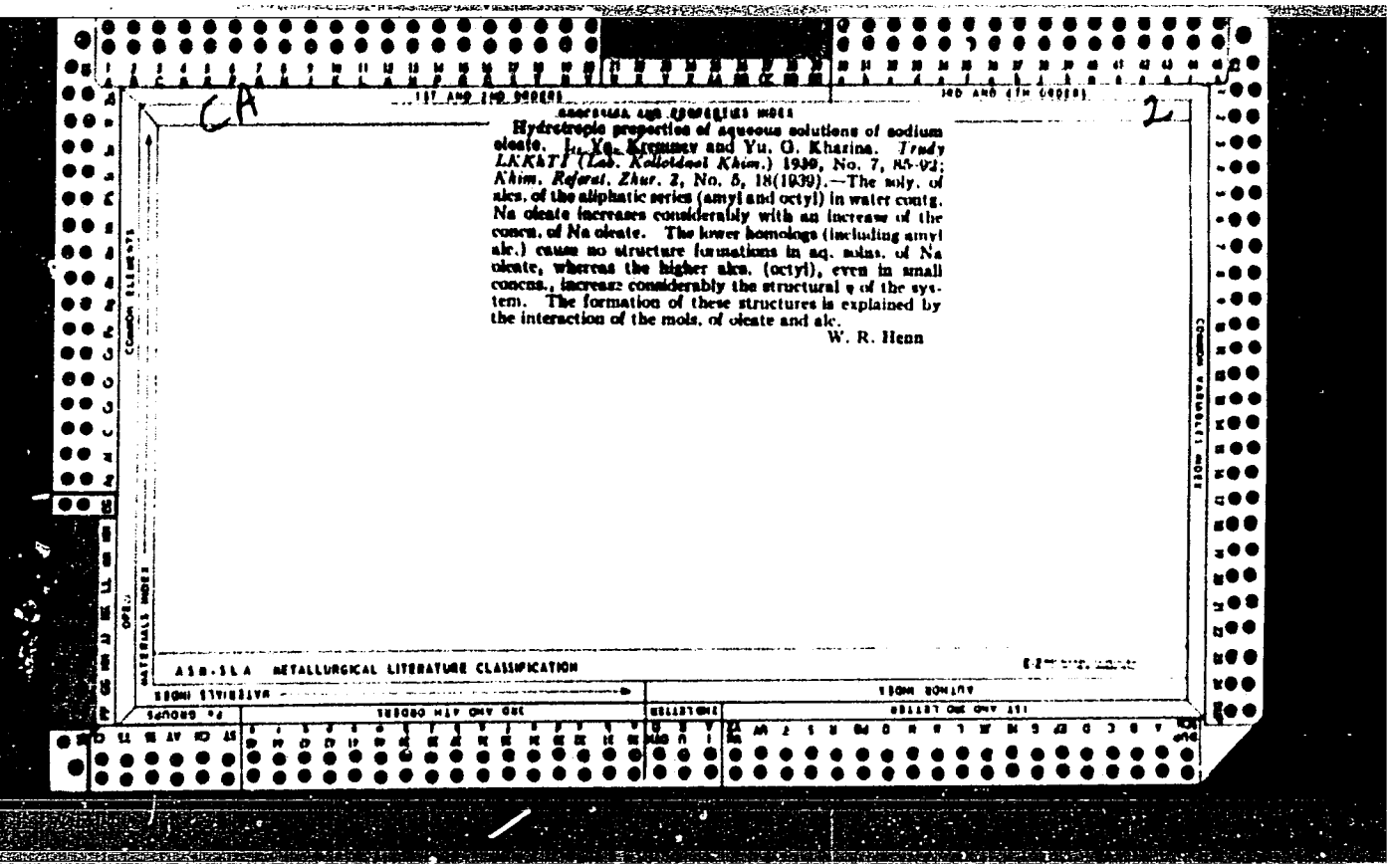

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Hydrotropic properties of aqueous solutions of sodium oleate. I. Ya. Kremney and Yu. G. Khazina. *Trudy LAKATT (Lab. Kolloidnoi Khim.)* 1939, No. 7, 85-92; *Khim. Referat. Zhur.* 2, No. 5, 18(1939).—The soly. of alks. of the aliphatic series (amyl and octyl) in water contg. Na oleate increases considerably with an increase of the concn. of Na oleate. The lower homologs (including amyl alc.) cause no structure formations in aq. solns. of Na oleate, whereas the higher alks. (octyl), even in small concns., increase considerably the structural η of the system. The formation of these structures is explained by the interaction of the mols. of oleate and alc.

W. R. Henn

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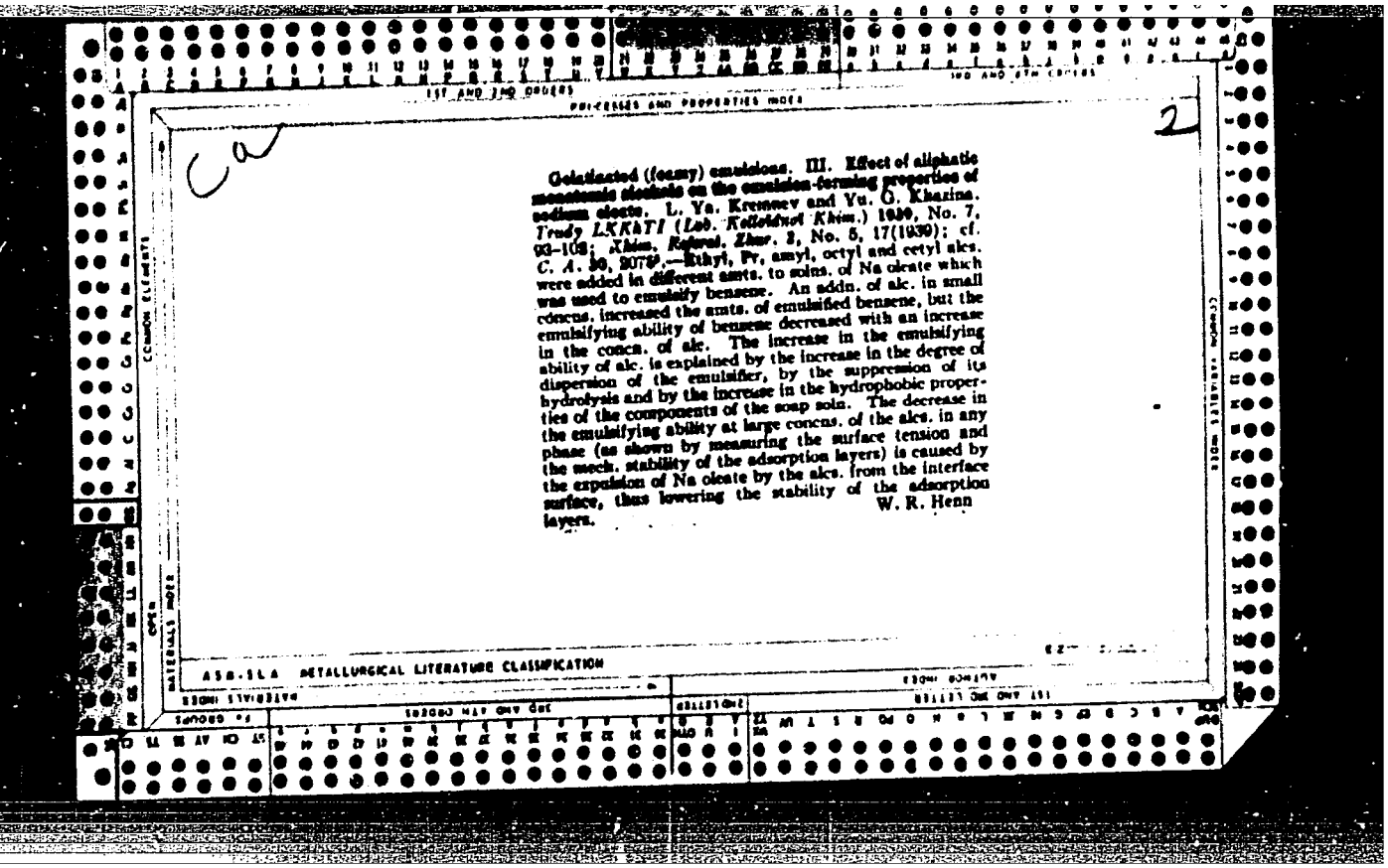

Coagulated (foamy) emulsions. III. Effect of aliphatic monatomic alcohols on the emulsion-forming properties of sodium oleate. L. Ya. Kremnev and Yu. G. Khazina. *Trudy LKKATI* (*Lab. Kolloidnoi Khim.*) 1939, No. 7, 93–103; *Khim. Referat. Zhur.* 3, No. 5, 17(1939); cf. *C. A.* 30, 2078⁹.—Ethyl, Pr, amyl, octyl and cetyl alcs. were added in different amts. to soins. of Na oleate which was used to emulsify benzene. An addn. of alc. in small concns. increased the amts. of emulsified benzene, but the emulsifying ability of benzene decreased with an increase in the concn. of alc. The increase in the emulsifying ability of alc. is explained by the increase in the degree of dispersion of the emulsifier, by the suppression of its hydrolysis and by the increase in the hydrophobic properties of the components of the soap soln. The decrease in the emulsifying ability at large concns. of the alcs. in any phase (as shown by measuring the surface tension and the mech. stability of the adsorption layers) is caused by the expulsion of Na oleate by the alcs. from the interface surface, thus lowering the stability of the adsorption layers.

W. R. Henn

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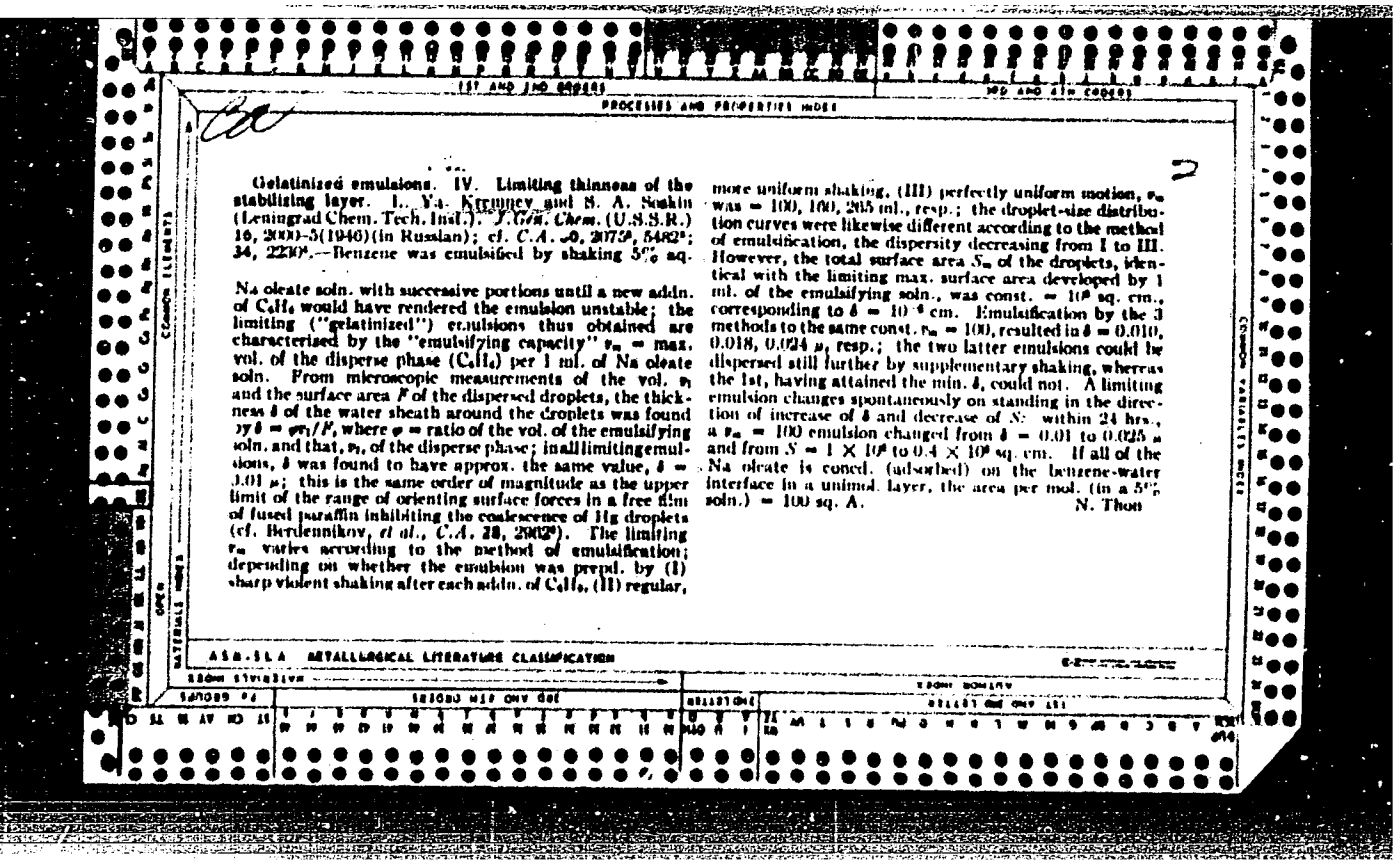

PROCESSES AND PROPERTIES INDEX

Gelatinized emulsions. IV. Limiting thinness of the stabilizing layer. L. Ya. Krtunov and S. A. Soskin (Leningrad Chem. Tech. Inst.). *J. Gen. Chem.* (U.S.S.R.) 10, 2000–5(1940)(in Russian); cf. *C.A.* 30, 2075⁹, 5482⁸; 34, 2230⁸.—Benzene was emulsified by shaking 5% aq. Na oleate soln. with successive portions until a new addn. of C_6H_6 would have rendered the emulsion unstable; the limiting ("gelatinized") emulsions thus obtained are characterised by the "emulsifying capacity" v_m = max. vol. of the disperse phase (C_6H_6) per 1 ml. of Na oleate soln. From microscopic measurements of the vol. v_1 and the surface area F of the dispersed droplets, the thickness δ of the water sheath around the droplets was found by $\delta = \varphi v_1/F$, where φ = ratio of the vol. of the emulsifying soln. and that, v_1, of the disperse phase; in all limiting emulsions, δ was found to have approx. the same value, δ = 0.01 μ; this is the same order of magnitude as the upper limit of the range of orienting surface forces in a free film of fused paraffin inhibiting the coalescence of Hg droplets (cf. Berdennikov, *et al.*, *C.A.* 28, 2902⁸). The limiting v_m varies according to the method of emulsification; depending on whether the emulsion was prepd. by (I) sharp violent shaking after each addn. of C_6H_6, (II) regular, more uniform shaking, (III) perfectly uniform motion, v_m was = 100, 160, 205 ml., resp.; the droplet-size distribution curves were likewise different according to the method of emulsification, the dispersity decreasing from I to III. However, the total surface area S_m of the droplets, identical with the limiting max. surface area developed by 1 ml. of the emulsifying soln., was const. = 10^6 sq. cm., corresponding to $\delta = 10^{-4}$ cm. Emulsification by the 3 methods to the same const. S_m = 100, resulted in δ = 0.010, 0.018, 0.024 μ, resp.; the two latter emulsions could be dispersed still further by supplementary shaking, whereas the 1st, having attained the min. δ, could not. A limiting emulsion changes spontaneously on standing in the direction of increase of δ and decrease of S: within 24 hrs., a v_m = 100 emulsion changed from δ = 0.01 to 0.025 μ and from $S = 1 \times 10^6$ to 0.4×10^6 sq. cm. If all of the Na oleate is concd. (adsorbed) on the benzene-water interface in a unimol. layer, the area per mol. (in a 5% soln.) = 100 sq. A. N. Thon

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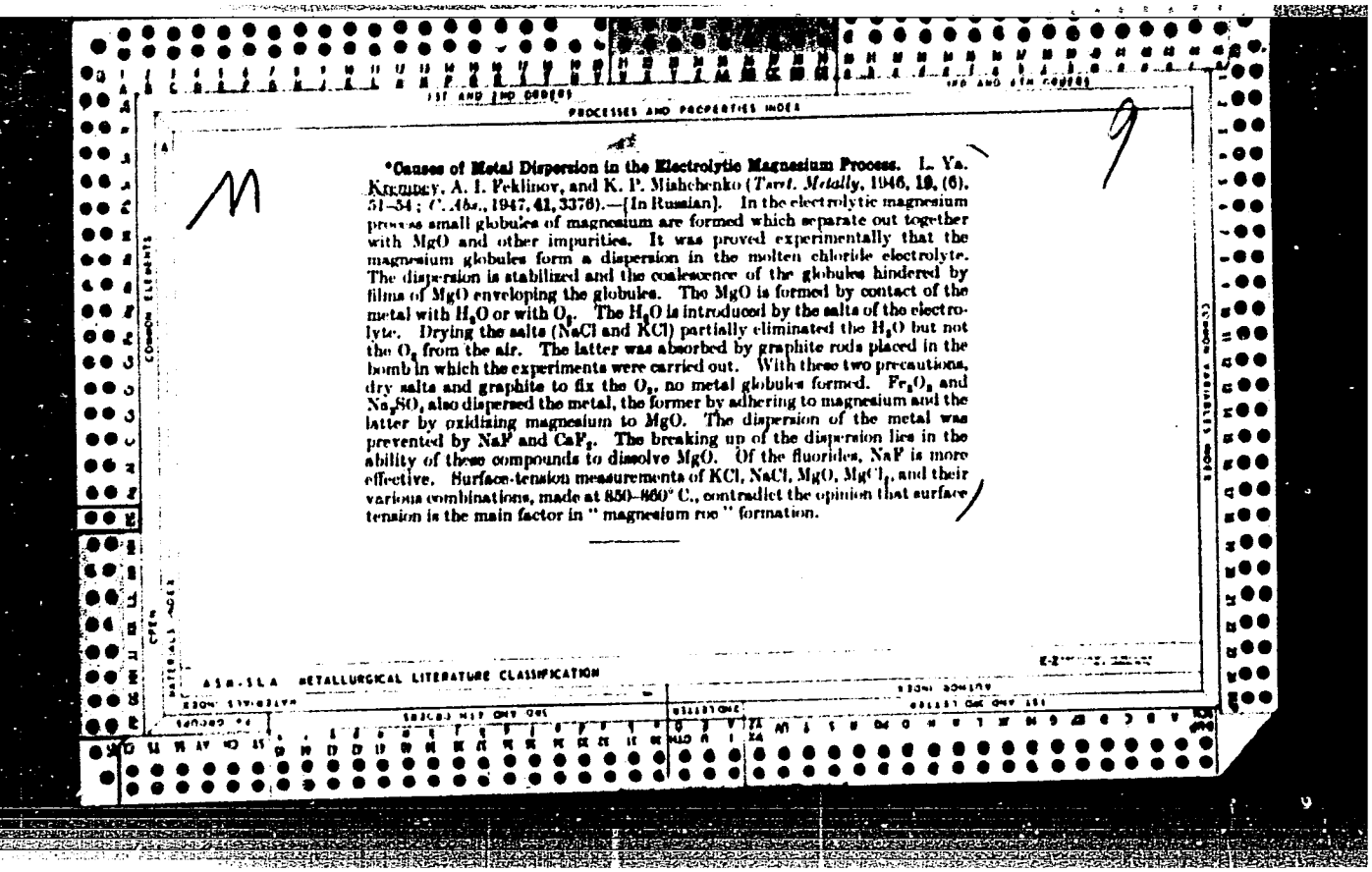

PROCESSES AND PROPERTIES INDEX

***Causes of Metal Dispersion in the Electrolytic Magnesium Process.** L. Ya. Kremney, A. I. Feklisov, and K. P. Mishchenko (*Tsvet. Metally*, 1946, **19**, (6), 51–54; *C. Abs.*, 1947, **41**, 3378).—[In Russian]. In the electrolytic magnesium process small globules of magnesium are formed which separate out together with MgO and other impurities. It was proved experimentally that the magnesium globules form a dispersion in the molten chloride electrolyte. The dispersion is stabilized and the coalescence of the globules hindered by films of MgO enveloping the globules. The MgO is formed by contact of the metal with H_2O or with O_2. The H_2O is introduced by the salts of the electrolyte. Drying the salts (NaCl and KCl) partially eliminated the H_2O but not the O_2 from the air. The latter was absorbed by graphite rods placed in the bomb in which the experiments were carried out. With these two precautions, dry salts and graphite to fix the O_2, no metal globules formed. Fe_2O_3 and Na_2SO_4 also dispersed the metal, the former by adhering to magnesium and the latter by oxidizing magnesium to MgO. The dispersion of the metal was prevented by NaF and CaF_2. The breaking up of the dispersion lies in the ability of these compounds to dissolve MgO. Of the fluorides, NaF is more effective. Surface-tension measurements of KCl, NaCl, MgO, $MgCl_2$, and their various combinations, made at 850–860° C., contradict the opinion that surface tension is the main factor in "magnesium rue" formation.

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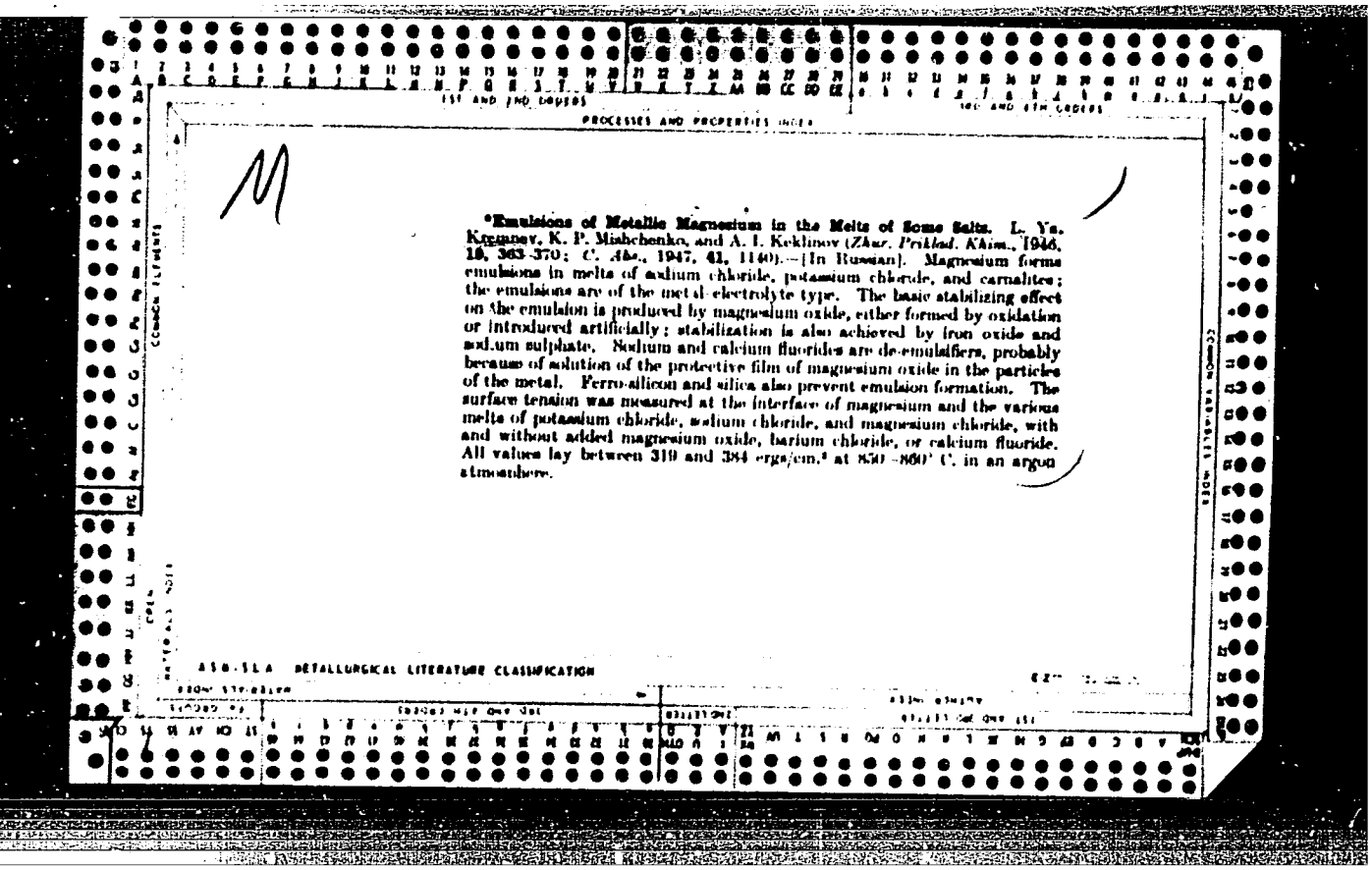

PROCESSES AND PROPERTIES INDEX

***Emulsions of Metallic Magnesium in the Melts of Some Salts.** L. Ya. Kramarov, K. P. Mishchenko, and A. I. Kokhanov (*Zhur. Prikład. Khim.*, 1946, **19**, 363-370; *C. Abs.*, 1947, **41**, 1140).—[In Russian]. Magnesium forms emulsions in melts of sodium chloride, potassium chloride, and carnallite; the emulsions are of the metal-electrolyte type. The basic stabilizing effect on the emulsion is produced by magnesium oxide, either formed by oxidation or introduced artificially; stabilization is also achieved by iron oxide and sodium sulphate. Sodium and calcium fluorides are de-emulsifiers, probably because of solution of the protective film of magnesium oxide in the particles of the metal. Ferro-silicon and silica also prevent emulsion formation. The surface tension was measured at the interface of magnesium and the various melts of potassium chloride, sodium chloride, and magnesium chloride, with and without added magnesium oxide, barium chloride, or calcium fluoride. All values lay between 319 and 384 ergs/cm.^{2} at 850–860° C. in an argon atmosphere.

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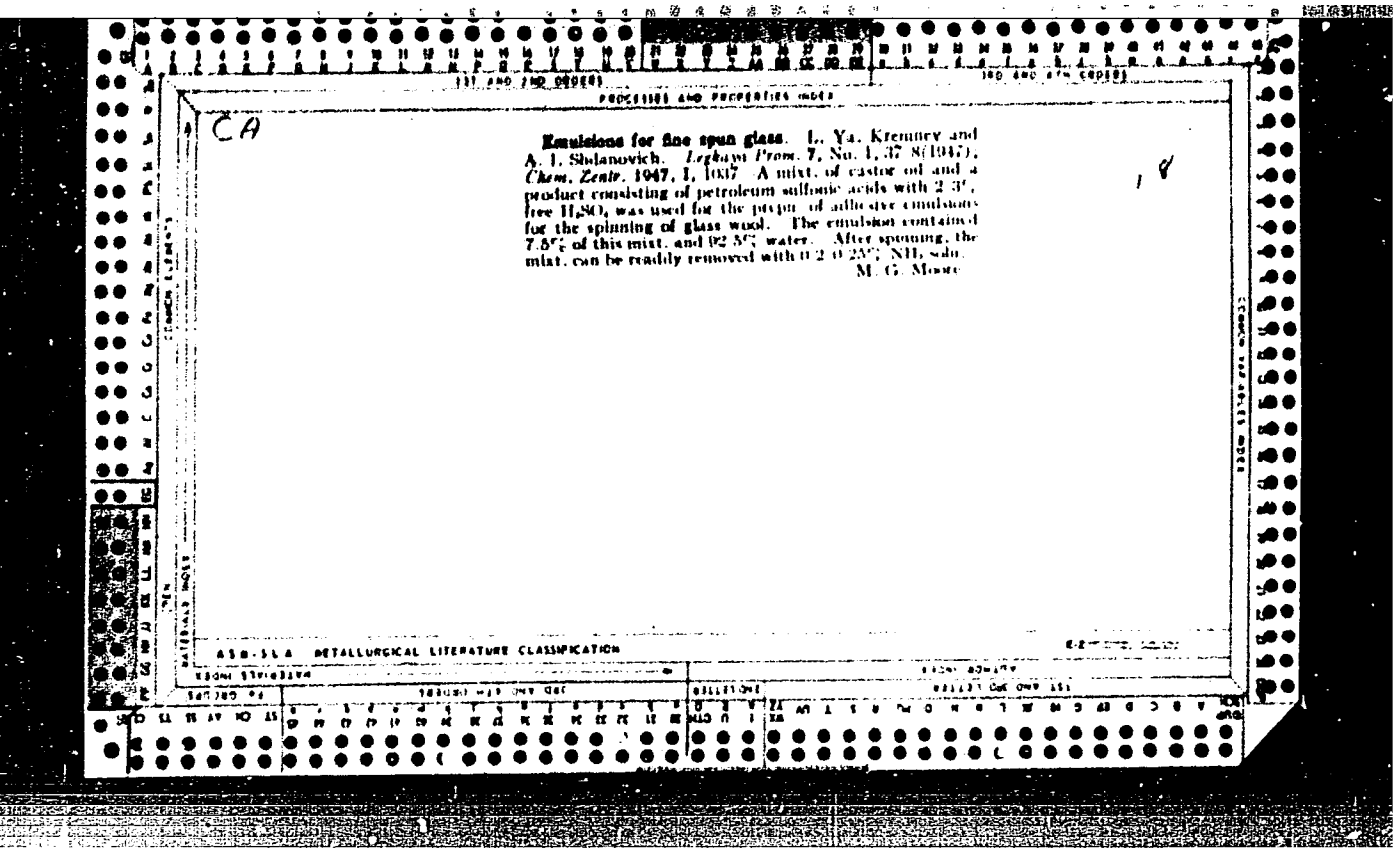

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Emulsions for fine spun glass. L. Ya. Kremnev and A. I. Shilanovich. *Legkaya Prom.* 7, No. 1, 37–8(1947). *Chem. Zentr.* 1947, I, 1017. A mixt. of castor oil and a product consisting of petroleum sulfonic acids with 2.3% free H_2SO_4 was used for the prepn. of adhesive emulsions for the spinning of glass wool. The emulsion contained 7.5% of this mixt. and 92.5% water. After spinning, the mixt. can be readily removed with 0.2–0.25% NH_3 soln.
M. G. Moore

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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KRCHMEV, L. Ya.

4

Gelatinized emulsions. V. Emulsifying ability of aqueous solutions of sodium oleate and gelatin. L. Ya. Kremnev and S. A. Soskin (Leningrad Technol. Inst.). *Kolloid Zhur.* 9, 259-70(1947).—The emulsifying ability A of a substance cannot be judged from the max. vol. V_m of C_6H_6 which can be emulsified by 1 cc. of the emulsifier soln., as V_m depends on the intensity of agitation (V_m is greater, the weaker is the shaking). The max. area S_m or the min. thickness δ of the stabilizing layer is a true measure of A; they did not vary when, because of varying agitation, V_m varied as 1:2.6; Na oleate (I) was the emulsifier. When I concn. c increased from 1% to 5%, 10%, and 15%, S_m was 33, 100, 100, and 110 × 10^4 sq. cm.; thus S_m and hence δ were independent of c at high c. The area s occupied by 1 mol. I was 160 sq. A. at c = 1%; thus, dil. monolayers were efficient emulsifiers. The dispersity of the emulsions slightly increased with c, but the most frequent particle diam. remained near 1 μ. The vol. of C_6H_6 that can be emulsified by 1 g. I was 3.3, 2.8, and 1.41 at c = 1, 5, and 15%; thus dil. solns. of I were better utilized. Photographic gelatin as emulsifier gave S_m of 12 × 10^4 sq. cm. at c = 0.5 and 1%; thus A of gelatin was 1/4th the A of I. J. J. B.

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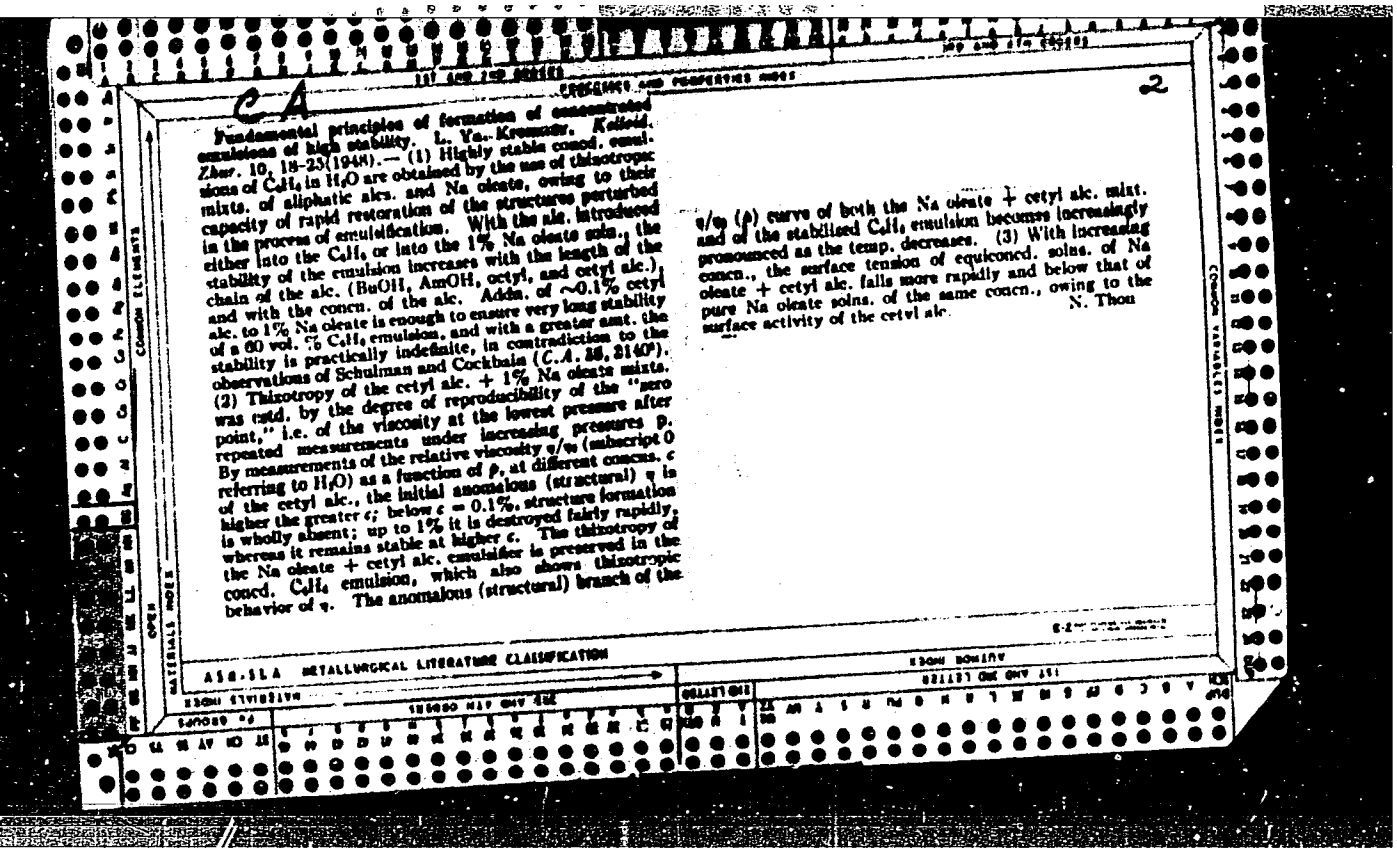

C A

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Fundamental principles of formation of concentrated emulsions of high stability. L. Ya. Kremnev. *Kolloid. Zhur.* 10, 18–25(1948).— (1) Highly stable concd. emulsions of C_6H_6 in H_2O are obtained by the use of thixotropic mixts. of aliphatic alcs. and Na oleate, owing to their capacity of rapid restoration of the structure perturbed in the process of emulsification. With the alc. introduced either into the C_6H_6 or into the 1% Na oleate soln., the stability of the emulsion increases with the length of the chain of the alc. (BuOH, AmOH, cetyl, and cetyl alc.), and with the concn. of the alc. Addn. of ~0.1% cetyl alc. to 1% Na oleate is enough to ensure very long stability of a 60 vol. % C_6H_6 emulsion, and with a greater amt. the stability is practically indefinite, in contradiction to the observations of Schulman and Cockbain (*C.A.* **35**, 2140⁹). (2) Thixotropy of the cetyl alc. + 1% Na oleate mixts. was estd. by the degree of reproducibility of the "zero point," i.e. of the viscosity at the lowest pressure after repeated measurements under increasing pressures p. By measurements of the relative viscosity η/η_0 (subscript 0 referring to H_2O) as a function of p, at different concns. c of the cetyl alc., the initial anomalous (structural) η is higher the greater c; below c = 0.1%, structure formation is wholly absent; up to 1% it is destroyed fairly rapidly, whereas it remains stable at higher c. The thixotropy of the Na oleate + cetyl alc. emulsifier is preserved in the concd. C_6H_6 emulsion, which also shows thixotropic behavior of η. The anomalous (structural) branch of the η/η_0 (p) curve of both the Na oleate + cetyl alc. mixt. and of the stabilized C_6H_6 emulsion becomes increasingly pronounced as the temp. decreases. (3) With increasing concn., the surface tension of equiconcd. solns. of Na oleate + cetyl alc. falls more rapidly and below that of pure Na oleate solns. of the same concn., owing to the surface activity of the cetyl alc. N. Thou

A58-51A METALLURGICAL LITERATURE CLASSIFICATION

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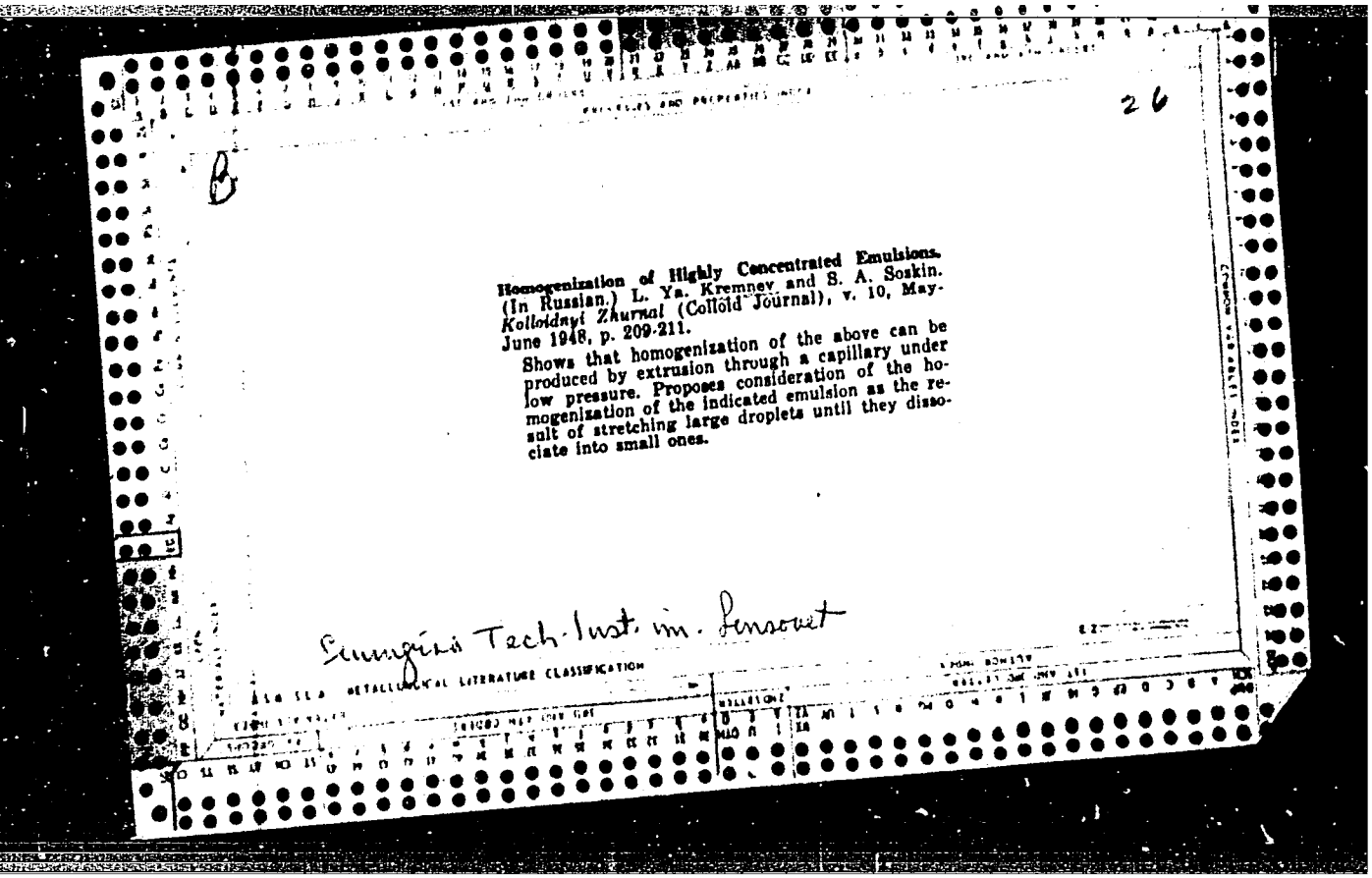

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Homogenization of Highly Concentrated Emulsions. (In Russian.) L. Ya. Kremnev and S. A. Soskin. *Kolloidnyi Zhurnal* (Colloid Journal), v. 10, May-June 1948, p. 209-211.

Shows that homogenization of the above can be produced by extrusion through a capillary under low pressure. Proposes consideration of the homogenization of the indicated emulsion as the result of stretching large droplets until they dissociate into small ones.

Leningrad Tech. Inst. im. Lensovet

METALLURGICAL LITERATURE CLASSIFICATION

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KREMNEV, L. YA.

PA 65/49T8

USSR/Chemistry - Soaps Nov/Dec 48
Emulsions, Gelatinized

"Gelatinized Emulsions: VI, The Quantitative Emulsified Nature of Oleates of Sodium, Calcium, Rubidium and Cesium," L. Ya. Kremnev, R. N. Kagan, Chair of Colloid Chem, Leningrad Technol Inst imeni Lensovet, 4½ pp

"Kolloid Zhur" Vol X, No 6 - p.436-40

Study determines the critical width of protective water layers in saturated, concentrated emulsions stabilized by oleates of sodium, calcium, rubidium, and cesium. Establishes the emulsive capacity of alkali oleates by determining the maximum surface S_{oo}, generated by one cu m of stabilizer solution during the formation of such emulsions. Soaps are located in the following series (the emulsive capacity of sodium oleate being used as unity): Oleates Na: K: Rb: Cs = 1: 2: 2.85: 5.0. Submitted 2 Oct 47.

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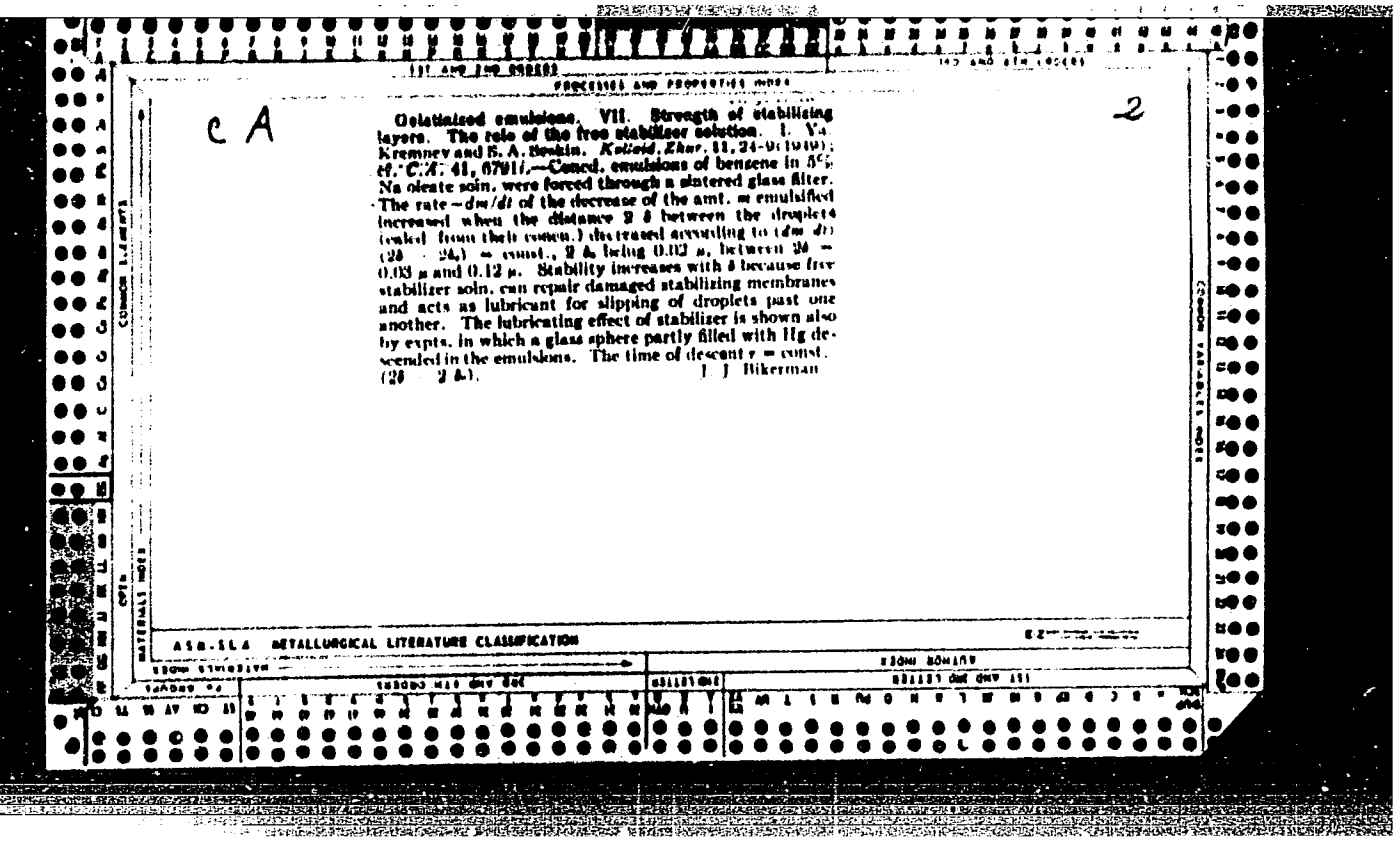

C A

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Gelatinized emulsions. VII. Strength of stabilizing layers. The role of the free stabilizer solution. I. Ya. Kremnev and B. A. Boskin. *Kolloid. Zhur.* 11, 24-9(1949); *cf. C.A.* 41, 6701i.—Concd. emulsions of benzene in 5% Na oleate soln. were forced through a sintered glass filter. The rate $-dw/dt$ of the decrease of the amt. w emulsified increased when the distance 2δ between the droplets (scaled from their centers) decreased according to $(dw/dt)(2\delta - 2\delta_0) = \text{const.}$, $2\delta_0$ being 0.113 μ, between 2δ = 0.13 μ and 0.12 μ. Stability increases with δ because free stabilizer soln. can repair damaged stabilizing membranes and acts as lubricant for slipping of droplets past one another. The lubricating effect of stabilizer is shown also by expts. in which a glass sphere partly filled with Hg descended in the emulsions. The time of descent $\tau = \text{const.}(2\delta - 2\delta_0)$. I. J. Bikerman

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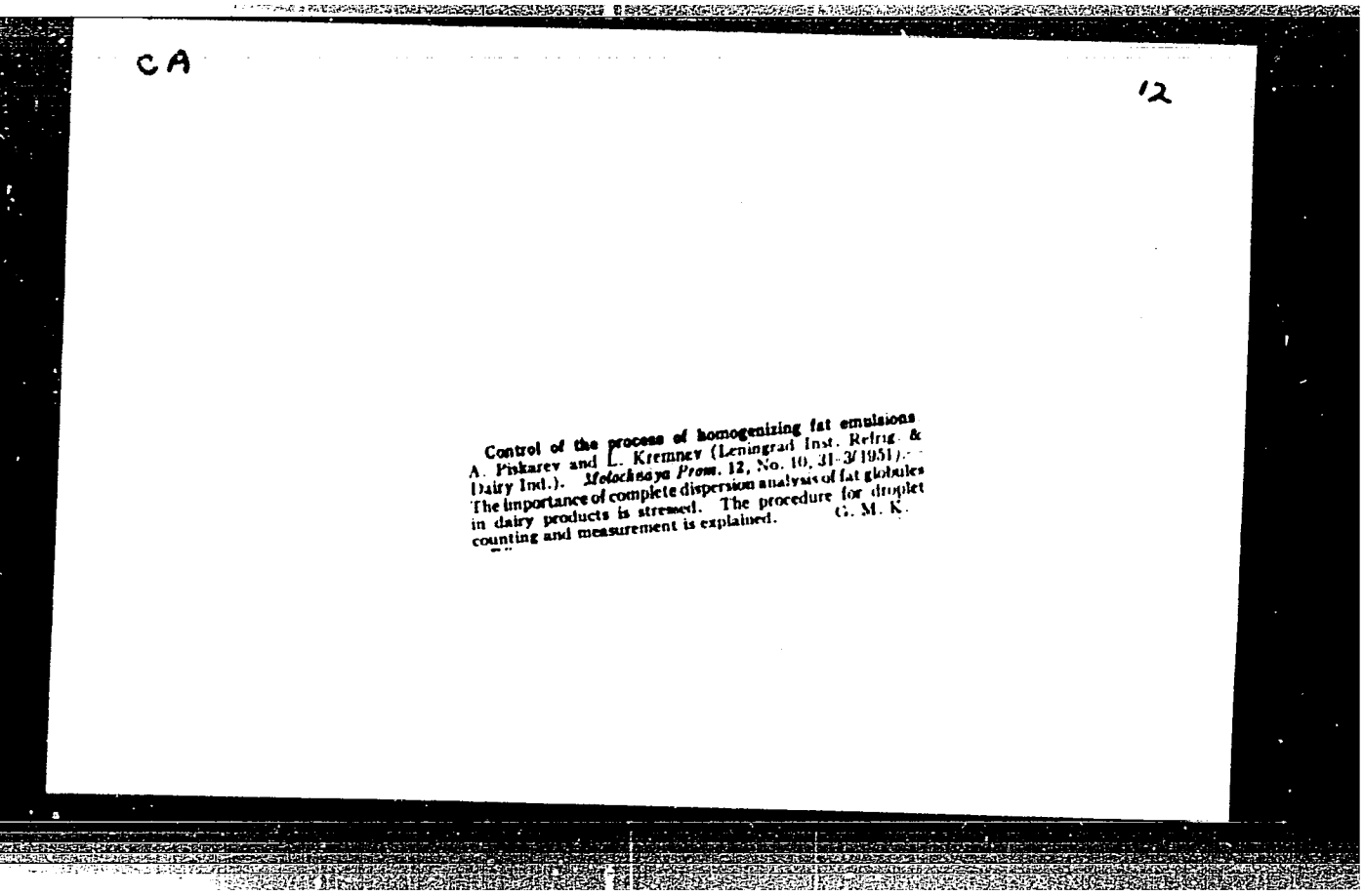

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Control of the process of homogenizing fat emulsions. A. Piskarev and L. Kremnev (Leningrad Inst. Refrig. & Dairy Ind.). *Molochnaya Prom.* 12, No. 10, 31-3(1951).—The importance of complete dispersion analysis of fat globules in dairy products is stressed. The procedure for droplet counting and measurement is explained. G. M. K.

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Gelatinized emulsions. VIII. Stabilization of oil in water and water-in-oil emulsions of the limiting concentration by triethanolamine oleate. Structure of protective adsorption-solvation layers in emulsions. L. Ya. Kremnev and N. I. Kuftina (Technol. Inst., Leningrad). *Kolloid. Zhur.* 13, 38–45(1951); cf. *C.A.* 43, 7775i.—$(HOCH_2CH_2)_3N$ oleate (I) can stabilize both oil-in-water and water-in-oil emulsions. The maximally concd. emulsions of C_6H_6 in 0.23–0.31 *M* aq. I had the film thickness δ of 100 A., corresponding to 50–70 sq. A. for each mol.; thus, the protective monolayer was rather dil. The emulsion in 0.22 *M* aq. $(HOCH_2CH_2)_3N$ stearate had δ = 110 A., i.e. 68 sq. A./mol.; this showed that the double bond in the oleate has no significant effect on emulsifying action. Aq. $(NH_4)_2CO_3$ solns. (concns. not specified) can be emulsified in I solns. in C_6H_6 or toluene. In these emulsions, δ was as low as 20 A., corresponding to, e.g., 130 sq. A./mol. These emulsions were stiff and consisted of bubbles mainly of 1 μ diam. Emulsions of aq. salt solns. (not of H_2O) in oil are stabilized by I, because the distribution of I between H_2O and C_6H_6 is shifted toward C_6H_6 by salts. Thus, the amt. of I extd. by C_6H_6 from an aq. soln. is increased, e.g., from 0.3 to 0.7 by 1.5 *M* $(NH_4)_2CO_3$ and KCl, to 0.8 by 1.5 *M* Na_2SO_4, to 0.88 by 1.5 *M* KI, and 0.9 by 1.5 *M* NaI. The emulsifier mols., which are immersed partly in the aq. and partly in the oil phase, act like rivets. J. J. Bikerman

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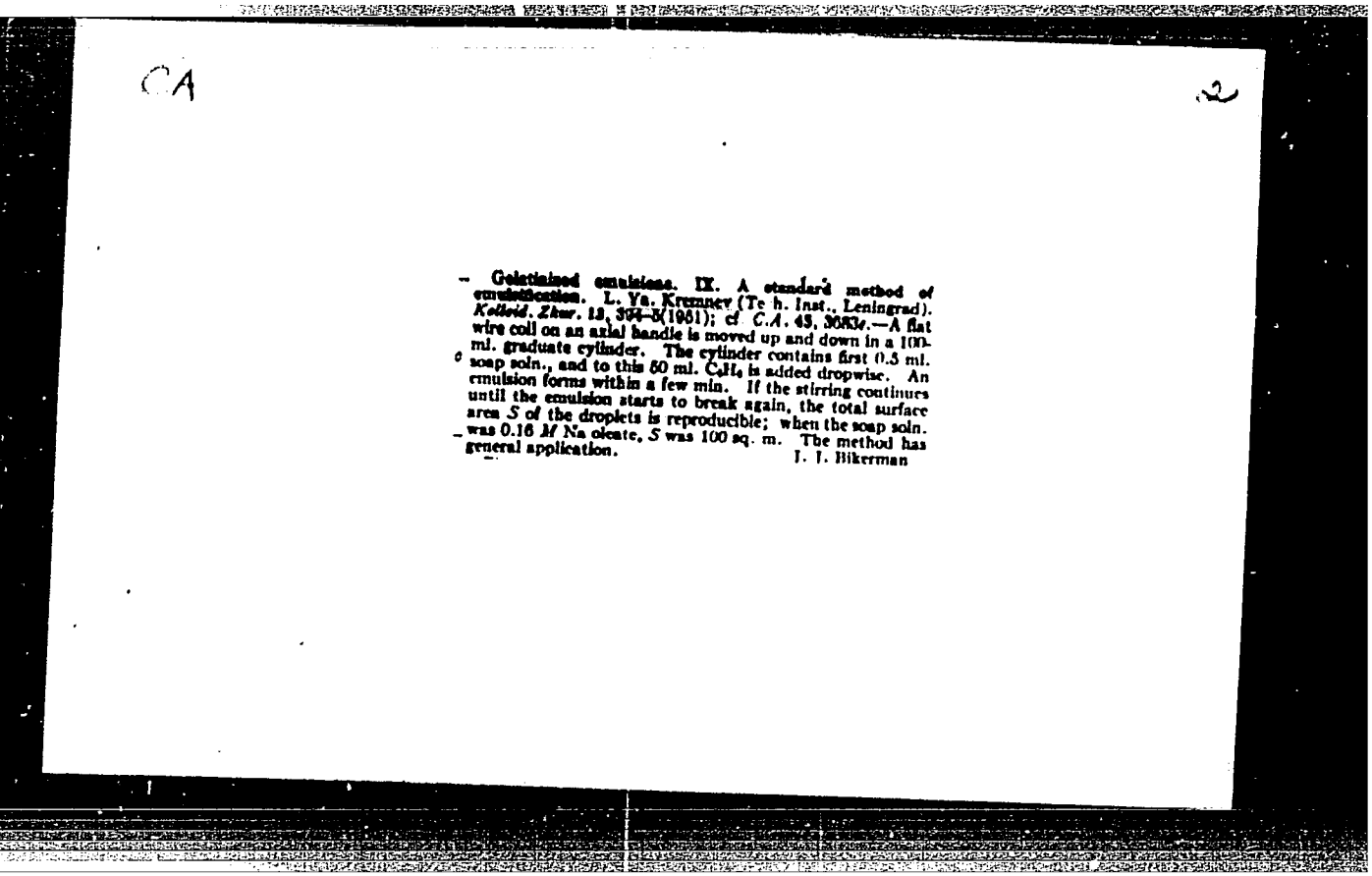

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Gelatinized emulsions. IX. A standard method of emulsification. L. Ya. Kremnev (Textile Inst., Leningrad). *Kolloid. Zhur.* 13, 304–8(1951); cf. *C.A.* 45, 3083*e*.—A flat wire coil on an axial handle is moved up and down in a 100-ml. graduate cylinder. The cylinder contains first 0.5 ml. soap soln., and to this 50 ml. C_6H_6 is added dropwise. An emulsion forms within a few min. If the stirring continues until the emulsion starts to break again, the total surface area S of the droplets is reproducible; when the soap soln. was 0.16 M Na oleate, S was 100 sq. m. The method has general application.

I. I. Bikerman

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KREMNEV

USSR

A simple method of emulsification. L. Ya. Kremnev and T. S. Khramtsova (Technol. Lensovet-Inst., Leningrad). *Doklady Akad. Nauk S.S.S.R.* 79, 655-7 (1951); *Chem. Zentr.* 1952, 808-9; cf. *C.A.* 46, 2574*i*; 48, 6784*h*.—A wire spiral of 2-3 turns is placed in 0.6 cc. of the stabilizer soln., and the liquid to be dispersed is added dropwise from a buret and allowed to flow down the wall of the vessel. The large drops are broken up into small ones by the up and down motion of the spiral just as they would be by shaking in a closed vessel. Values for max. surface and min. thickness of the continuous phase detd. on 10 emulsions of benzene in Na oleate showed these values to be satisfactorily reproducible. These values agreed with those obtained for emulsions prepd. by the usual shaking in a closed cylinder. Sufficiently stable concd. emulsions were obtained at different vol. ratios of the phases. M. G. Moore

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KOROTKOV, A.G.; MIRINOOF, A.S.; KHENNEV, L.A.

Producing molds from sand-clay mixtures by the high pressure method. Trakt. i sel'khozmash. 31 no.11:39-44 N '61. (MIRA 14:12)

1. Nauchno-issledovatel'skiy institut tekhnologii i traktornogo i sel'skokhozyaystvennogo mashinostroyeniya.
(Molding(Founding))
(Sand, Foundry)
(Clay)

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C.A.

Homogenization of emulsions by pressing through capillaries under low pressures. L. Ya. Kremnev and V. S. Kuprik (Leningrad Technol. Inst.). Doklady Akad. Nauk S.S.S.R. 80, 623-5(1951). The sp. surface area s of 90, 80, and 50% emulsions of C_6H_6 in a 5% soln. of Na oleate, pressed through capillaries 0.2-100 cm. long, diam. 0.23-12 mm., under pressures not exceeding 5 atm., increases linearly with the flow velocity v. In 90 and 80% emulsions, the straight line passes through the origin, and its slope increases strongly with the concn. of the emulsion. In a 50% emulsion, the increase of s with v is much slower, and the line does not pass through the origin. With the 90% emulsion, with a capillary of given dimensions and under a const. pressure, the value of s after homogenization increases markedly with decreasing viscosity of the disperse phase (mixts. of C_6H_6 and petrolatum). Under the same conditions, the increase of s after pressing through the capillary is affected by the nature of the stabilizer, decreasing in the order, Na oleate, saponin, gum arabic, gelatin. Photomicrographic examn. showed the flow to be turbulent even at very low velocities of flow (8 cm./sec.). N. Thon

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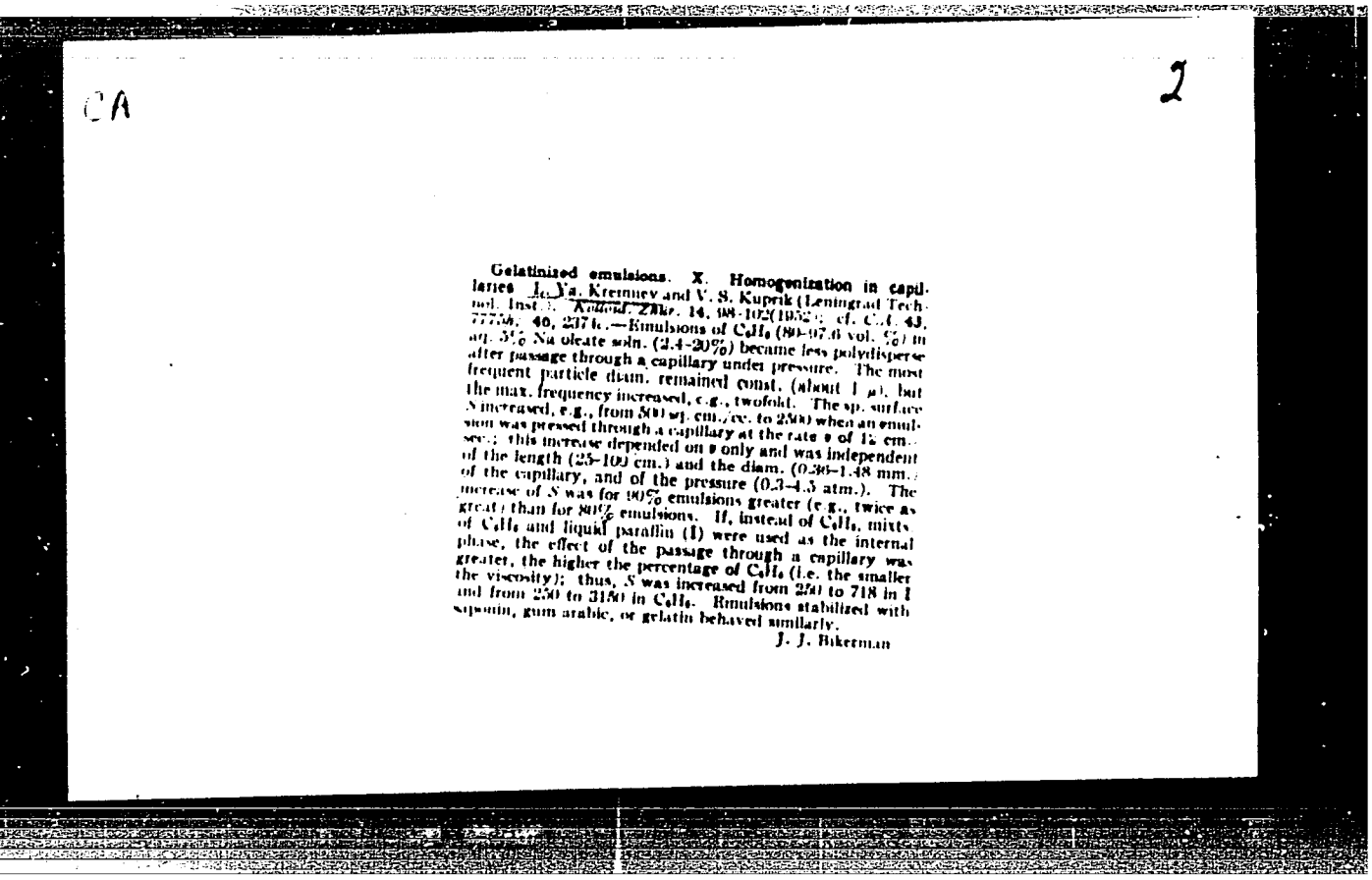

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Gelatinized emulsions. X. Homogenization in capillaries. Ia. Ya. Kremnev and V. S. Kuprik (Leningrad Technol. Inst.). *Kolloid. Zhur.* 14, 98-102(1952); cf. *C.A.* 43, 7775*h*; 46, 2274*h*.—Emulsions of C_6H_6 (80–97.6 vol. %) in aq. 5% Na oleate soln. (2.4–20%) became less polydisperse after passage through a capillary under pressure. The most frequent particle diam. remained const. (about 1 μ), but the max. frequency increased, e.g., twofold. The sp. surface S increased, e.g., from 500 sq. cm./cc. to 2500 when an emulsion was pressed through a capillary at the rate v of 12 cm./sec.; this increase depended on v only and was independent of the length (25–100 cm.) and the diam. (0.38–1.48 mm.) of the capillary, and of the pressure (0.3–4.3 atm.). The increase of S was for 80% emulsions greater (e.g., twice as great) than for 80% emulsions. If, instead of C_6H_6, mixts. of C_6H_6 and liquid paraffin (I) were used as the internal phase, the effect of the passage through a capillary was greater, the higher the percentage of C_6H_6 (i.e. the smaller the viscosity); thus, S was increased from 270 to 718 in I and from 250 to 3150 in C_6H_6. Emulsions stabilized with saponin, gum arabic, or gelatin behaved similarly.

J. J. Bikerman

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RAVDEL', A.A.; KREMNEV, L.Ya.; REBINDER, P.A., akademik.

Boundary dimensions of droplets in emulsions. Dokl.AN SSSR no.4:599-602 Je '53. (MLRA 6:5)

1. Akademiya, Nauk SSSR (for Rebinder). 2. Leningradskiy tekhnologicheskiy institut im. Lensoveta (for Ravdel', Kremnev). (Drops) (Emulsions)

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KREMNEV, L. YA.

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5976. Conditions of the spontaneous disintegration of drops during emulsification. L. YA. KREMNEV AND A. A. RAVDEL'. *Dokl. Akad. Nauk SSSR*, 90, No. 3, 415–7 (1953) *In Russian.*

According to Rebinder [*Kolloidnyi Zhurnal*, 8, 157 (1946)], the dispersion of the disperse phase of an emulsion is effected by the spontaneous disintegration of drops which are stretched beyond a certain critical ratio $h/a = 2\pi$, where h is the height and r the radius of the base of the liquid cylinder. Mathematical analysis shows that, irrespective of the relative radii of the two resultant drops, the least favourable conditions for disintegration are when the ratio $\Sigma S_d/S_c$ (the sum of surfaces of the resultant drops, divided by the surface of the cylinder) equals 2. Values below 2 favour the disintegration much more than those above 2. Hence the unstable condition of the cylindrical drop can be attained at small compression values. Finally, the disintegration occurs more readily for large values of the ratio $\Sigma S_d/S_c$ than for the smaller ones.

B. LACHMAN

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Kremnev, L. Ya.

The limiting dimensions of the droplets in an emulsion. A. A. Ravdel and L. Ya. Kremnev (Lensovet Technol. Inst., Leningrad). *Doklady Akad. Nauk S.S.R.* 90, 599-602(1953).—Coalescence of the droplets in an emulsion made mechanically of pure liquids, follows Smolukhovskii's equation: $\varphi - \varphi_0 = K\tau_K$, where φ_0 and φ are the initial and final volumes, resp., of a droplet; τ_K is time, and K is the velocity const. of coagulation. $K = (4/3)(kT/\eta)$, where k is the Boltzmann const., T is abs. temp., and η is the viscosity of the dispersing medium (water). For a coned. emulsion of benzene in water at room temp., $K = 5.5 \times 10^{-13}$ cc./sec., and $\tau_K = 1.8 \times 10^{14}(\varphi - \varphi_0)$ sec. For droplets of radii 0.1, 1.0, 10, and 100 μ (the volumes are 3.3×10^{-12}, 3.3×10^{-12}, 3.3×10^{-9}, and 3.3×10^{-6} cc./droplet), τ_K, the time for the vol. to increase 1000 times (by coalescence) is: 6×10^{-4}, 0.6, 6×10^{2}, and 6×10^{5} sec., resp. For an emulsion contg. a surface-active stabilizer, such as soap, the authors derive an equation for τ_p, starting with the Gibbs-Thomson equation for the adsorbed surface layer on the droplets. Their final equation is $\tau_p = (RT\delta^2/6\sigma MCD_3)(r_0^3 - r^3)$. For benzene and water, the surface tension σ is 35 dynes/cm., C_0, the satd. concn. in the vol. of the dispersing medium is 7×10^{-4} g./cc. at $T = 298°$, the coeff. of diffusion D of benzene into water is taken as 1 sq. cm./day. M and δ are the mol. wt. and d. of the disperse phase. With these values, $\tau_p = 1.38 \times 10^{6}(r_0^3 - r^3)$ days. When $r = 0.1\ r_0$, this formula gives the time taken for the droplet to decrease in size by 0.1 r_0. This decrease is caused by diffusion, (which is taken as equiv. to the isothermal distn. of the droplets) which goes on even as the emulsion ages, with an eventual coarsening of the larger droplets. The above equation, when r_0 is 0.1, 1, 5, and 10 μ, yields τ_p, 0.12 sec., 1 min., 4 hrs. 10 min., and 1.38 days, resp. In other words, there are 2 ways by which emulsified droplets increase in size: (1) by coalescence, which, however, is hindered when a stabilizer covers the surface of the droplets, and (2) by aging of the emulsion, which is usually observed. V. H. Gottschalk

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KREMNEV, L. Ya.

(3)

The mechanism of emulsification. L. Ya. Kremnev and A. A. Ravdel (Lensovet. Technol. Inst., Leningrad). *Kolloid. Zhur.* 16, 17-28(1954); cf. *C.A.* 46, 5931b.—A liquid cylinder (whose ratio of height to radius is k) spontaneously breaks into 2 spherical drops (whose radii are in the ratio n:1) when the total surface area of the drops is smaller than that of the cylinder, i.e. when $\beta = [2(n^2 + 1)/(1 + k)][3k/4(n^3 + 1)]^{1/3}$ is greater than 1. The drop formation is least probable when $k = 2$ and when $n = 1$; its probability is almost independent of n when $n < 0.2$ or $n > 5$. An ellipsoid (with axis ratio k) spontaneously gives 2 drops when $(n^2 + 1)/[(n^3 + 1)^{1/3} K^{1/3}] > 1$ for prolate and $(n^2 + 1)K^{1/3}/(n^3 + 1)^{1/3} > 1$ for oblate shape. Equations are given also for breakdown of an ellipsoid into many droplets and for successive sepn. of many small droplets from an ellipsoid. The inverse process of coalescence of small drops follows the Smoluchowsky theory; when the droplets are less than about 1 μ in diam., their coalescence is more rapid than their formation; thus usual emulsions, both stabilized and unstabilized, contain chiefly particles of about 1 μ. The aging of emulsions is due partly to soln. of small, and growth of large, particles; the time for particle radius r_0 to decrease to r is $RT\delta^2(r_0^3 - r^3)/6\,\sigma MDc$; δ, M, and c are d., mol. wt., and soly. of the disperse phase; σ = interfacial tension, and D = diffusion coeff. I. I. B.

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KREMNEV, L.Ya.; KUYBINA, N.I.

Gelation of emulsions. Part 11. Saturated, concentrated emulsions of the V/M type stabilized with alkaline oleates. Koll.zhur. 16 no.5:358-365 S-O '54. (MLRA 7:11)
(Emulsions) (Gelation)

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KREMNEV L. Ya.

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Gelatinized emulsions. XII. Effect of the length of the hydrocarbon chain of the stabilizer molecule on emulsification. L. Ya. Kremnev and N. I. Kulikina (Lensovet Technol. Inst., Leningrad). *Kolloid. Zhur.* 16, 417-60; *Colloid J. (U.S.S.R.)* 16, 425-8(1954)(English translation); cf. *C.A.* 49, 7326c.—In the most concd. emulsions of C_6H_6 in aq. solns. of $(HOC_2H_4)_3N$ salts of fatty acids the total areas S_∞ of the droplets surrounded by 1 cc. of the aq. phase were 91, 125, 200, 333, 333, and 333 sq.m. for the salts of stearic, palmitic, myristic, lauric, decanoic, and nonanoic acids, resp., when the salt concn. was such (0.2–1.0*M*) that its further increase had no effect on S_∞. The av. droplet diam. was 1.1 μ for most emulsions and 1.3–1.5 μ for those stabilized by the soaps of C_7 and C_9 acids. Emulsions stabilized by $(HOC_2H_4)_3N$ octanoate were unstable. The area of the droplet surface stabilized by 1 mol. soap was greatest (over 100 sq. A.) for the laurate. Also the persistence of soap films, detd. after Rebinder and Smirnova (*C.A.* 41, 1525g) was max. for the laurate (20 sec.) against 6, 9, 14, 16, 10, and 8 sec. for octanoate, nonanoate, decanoate, myristate, palmitate, and stearate, resp., all in 0.001*M* soln., which gave rise to the most persistent films.

J. J. Bikerman

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[redacted], L. Ya. Leonid Yakovlevich

"The Emulsification Mechanism and the Problem of Forming High Dispersion Stable Emulsions." Dr Chem Sci, Chair of Colloid Chemistry, Leningrad Technological Inst imeni Leningrad Council, Min Higher Education USSR, Leningrad, 1955. (KL, No 14, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

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KREMNEV, L. Ya.

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Phase inversion in emulsions. L. Ya. Kremnev and N. I. Kulbina. *Kolloid. Zhur.* 17, 31-3; *Colloid J.* (U.S.S.R.) 17, 31-3(1955)(English translation); cf. preceding abstr.—When to an oil-in-water emulsion of equal vols. of C_6H_6 and 0.3*M* aq. soln. of Na oleate, NH_4 oleate, or $(HOC_2H_4)_3N$ oleate increasing amts., *c*, of dry NaCl, Na_2SO_4, Na_2CO_3, NH_4Cl, $(NH_4)_2SO_4$, or $(NH_4)_2CO_3$ were added, the emulsion was broken at *c* of about 0.25 mole/l. At a slightly greater *c* (about 0.3 mole/l.) phase inversion occurred, and the resulting water-in-oil emulsion was stable; it could be broken by addn. of H_2O. In the absence of foreign salts, the hydrophilic end of the emulsifier is more solvated by H_2O than the hydrophobic end is by C_6H_6; hence water is the continuous phase. Foreign salts "dehydrate" the hydrophilic part, and its solvation becomes less than that of the hydrophobic radical; hence, C_6H_6 becomes the continuous phase. The degree of solvation can be judged from the crit. thickness of the films of the continuous phase in emulsions of limit concn.; if this thickness is greater for the aq. than for the oil phase, H_2O is the continuous phase; otherwise, H_2O forms droplets. J. J. Bikerman

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Leningrad Technological Inst.

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KREMNEV, L. YA.

USSR/Colloid Chemistry. Dispersion Systems B-14

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 26413

Author : L.Ya. Kremnev, S.V. Nerpin, N.I. Kuybina
Inst : Academy of Sciences of USSR
Title : Nature of Aging of Highly Concentrated Emulsions

Orig Pub : Dokl. AN SSSR, 1956, 109, No 6, 1152-1155

Abstract : The prolonged aging of highly concentrated converse emulsions (E) of the v/m type stabilized by NH_4, Na and triethanolamine oleates was investigated. First, the dispersed liquid begins to separate from the E surface as an unbroken layer, and after a prolonged time the system falls completely to pieces. The drops (D) increase simultaneously in size. In the authors' opinion, the drop of the dispersion degree is caused by the isothermal distillation (ID) of tiny drops (RZhKhim, 1954, 33982) through the thin adsorption-solvate layers separating them from the neighboring drops of a larger size. At this occasion the protection layers break through in the result of their curvature change and of the rise of the Laplace pressure in the process of ID. The large drops on the emulsion

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